

D A C \$

CERTIFICATE OF MAILING PURSUANT TO 37 C.F.R. §1.8

I hereby certify that this Response and Amendment Pursuant to 35 U.S.C. 121 is being deposited with the United States Postal Service as first class mail in an envelope addressed to: Mail Stop Missing Parts, Commissioner for Patents, P.O. Box 1450, Alexandria, Virginia 22313-1450, on:

Date: February 8, 2005

By: Serge J. Massacri

Signature of person depositing as First Class Mail



PATENT

**IN THE UNITED STATES
PATENT AND TRADEMARK OFFICE**

| | | | |
|--------------|---|---------------------|------------|
| Applicants: | Cheng-Chieh Chuang, et al. | Docket No.: | 39524.6900 |
| Serial No.: | 10/603,901 | Group Art Unit No.: | 2655 |
| Filing Date: | June 25, 2003 | Examiner: | TBA |
| Title: | DISC APPARATUS WITH DEVICE FOR PREVENTING EJECTION OF A CRACKED DISC | | |

PETITION UNDER 37 C.F.R. 1.182

Mail Stop Missing Parts
Commissioner for Patents
P.O. Box 1450
Alexandria, Virginia 22313-1450

Dear Sir/Madam:

Further to the decision issued by the Office of Petitions on December 17, 2004, Applicants hereby renew their Petition the Commissioner to acknowledge that the original application, as filed on June 25, 2003, included all of the drawing figures.

Applicants received a Notice to File Missing Parts dated September 11, 2003, indicating that, although the application notes that the application includes Figure 4(b), Figure 4(b) appears to be missing from the application.

Applicants submit that Figure 4(b) was included with the application as filed. In particular, copies of all of the figures were attached to the priority application, which was included with the filing documents of the present application. Accordingly, a copy of Figure 4(b) was deposited in the USPTO with the application papers.

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02/14/2005 HMARZI1 00000088 10603901

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Serial No.: 10/603,901

BEST AVAILABLE COPY

As evidence that Figure 4(b) was submitted with the filing papers, Applicants submitted a return postcard showing that the priority document, with all of the figures, was submitted to the Patent Office on June 25, 2003. In the December 17, 2004 Decision, the Petitions Attorney noted that the date was not indicated on the postcard and thus the postcard could not serve as evidence that the items listed thereon were received by the Patent Office.

Applicants hereby submit another copy of the postcard, showing the date that the Patent Office received the application and the priority document, which includes Figure 4(b). In view of this evidence showing that the Patent Office received a copy of Figure 4(b) with the application as filed on June 25, 2003, Applicants request that this application be accorded the filing date of June 25, 2003.

Check number 298763 in the amount of \$130.00 to cover the petition fee as set forth in 37 C.F.R. §1.17(h) is enclosed. The Commissioner is hereby authorized to charge any deficiency or credit any such overpayment to Deposit Account No. 19-2814, **for which purpose a duplicate copy of this Petition is also enclosed.**

Should the Petitions Attorney deem that, for any reason, Figure 4(b) was not submitted with the original filing papers, the undersigned requests a telephone call at the number listed below. In any event, Applicants request the filing date of June 25, 2003.

Respectfully submitted,

Date: February 8, 2004

By: 
Cynthia L. Pillote
Reg. No. 42,999

SNELL & WILMER, L.L.P.
One Arizona Center
400 East Van Buren
Phoenix, AZ 85004-2202
Phone: (602) 382-6296
Fax: (602) 382-6070
cpillote@swlaw.com



COPY

BAC

Snell & Wilmer L.L.P.
One Arizona Center
400 East Van Buren
Phoenix, Arizona 85004-2202

Attention: IP Department



THE U.S. PATENT AND TRADEMARK OFFICE OFFICIAL MAIL
ROOM STAMP AFFIXED HERETO ACKNOWLEDGES RECEIPT
OF THE ITEMS CHECKED BELOW

| Patent App. No. | To Be Assigned |
|-----------------|---|
| Filing Date: | June 25, 2003 |
| Priority Info: | Taiwan Pat. App. No. 091113858 Taiwan Filing Date 25 JUN 02 |
| Inventor: | CHUANG, Cheng-Chieh CHIU, Hsien-Tsung HUANG, Chiu-An |
| Assignee: | BENQ CORPORATION |
| Title: | DISC APPARATUS WITH DEVICE FOR PREVENTING EJECTION OF A CRACKED DISC |

- | | |
|-------------------------------------|---|
| <input checked="" type="checkbox"/> | Utility Patent Application Transmittal (1 pg.) |
| <input checked="" type="checkbox"/> | Fee Transmittal for FY 2003 (1 pg.) [plus duplicate copy] |
| <input checked="" type="checkbox"/> | Specification, Claims, Abstract (13 pgs.) Total Claims: 20 Independent Claims: 4 |
| <input checked="" type="checkbox"/> | Drawings (formal) (7 pgs.) |
| <input checked="" type="checkbox"/> | Declaration for Patent Application (English Language Declaration) (2 pgs.) |
| <input checked="" type="checkbox"/> | Recordation Form Cover Sheet (1 pg.) |
| <input checked="" type="checkbox"/> | Assignment (3 pgs.) |
| <input checked="" type="checkbox"/> | Priority Document (Taiwan App. No. 091113858) |
| <input checked="" type="checkbox"/> | Snell & Wilmer check number 561488 for \$874.00 |
| <input checked="" type="checkbox"/> | Authorization to charge any deficiency and credit any over- payment to Deposit Account No. 19-2814 |
| <input checked="" type="checkbox"/> | |
| <input checked="" type="checkbox"/> | |
| <input checked="" type="checkbox"/> | Marked items filed on June 25, 2003 via: LX 1 Express Mail No. EV32588086US |

NOTED (FOR REVIEW)
First Class U. S. Mail

S&W Docket No.: 39524.6900 Atty.: PILLOTE / Clausen

561488

**SNELL & WILMER, PHOENIX, ARIZONA
INVOICE AND DATE DESCRIPTION**

| INVOICE NO. | DATE | DESCRIPTION | INVOICE AMOUNT | DISCOUNT | NET AMOUNT |
|-------------|----------|-------------------------|----------------|----------|------------|
| 062003 | 06/20/03 | MARY S 39524-0001(6900) | 874.00 | 0.00 | 874.00 |

V: 1755 561488 874.00 0.00 874.00

CHECK NO. **561488**

SNELL & WILMER, L.L.P.
WITH OFFICES IN:
TUCCSON, ARIZONA
IRVINE, CALIFORNIA
SALT LAKE CITY, UTAH
ONE ARIZONA CENTER
PHOENIX, ARIZONA 85004-0001

91-2/1221

DATE: 1755 06/23/2003 CHECK NO. 561488
PAY EXACTLY

VEND: 1755 06/23/2003 DATE: 1755 CHECK NO. 561488
PAY EXACTLY

PAY EXACTLY

Void if not processed in 90 days

TO THE ORDER OF
**COMMISSIONER OF PATENTS
AND TRADEMARKS**

"561488" 1:122100024:

1005911#

COPY

Under the Paperwork Reduction Act of 1995, no persons are required to respond to a collection of information unless it displays a valid OMB control number.

UTILITY PATENT APPLICATION TRANSMITTAL

(Only for new nonprovisional applications under 37 CFR 1.53(b))

| | |
|------------------------|--|
| Attorney Docket No. | 39524.6900 |
| First Inventor | CHUANG, Cheng-Chieh |
| Title | Disc Apparatus with Device for Preventing |
| Express Mail Label No. | EV325888086US |

APPLICATION ELEMENTS

See MPEP chapter 600 concerning utility patent application contents.

1. Fee Transmittal Form (e.g., PTO/SB/17)
(Submit an original, and a duplicate for fee processing)2. Applicant claims small entity status.
See 37 CFR 1.27.3. Specification [Total Pages 13]
(preferred arrangement set forth below)

- Descriptive title of the invention
- Cross Reference to Related Applications
- Statement Regarding Fed sponsored R & D
- Reference to sequence listing, a table, or a computer program listing appendix
- Background of the Invention
- Brief Summary of the Invention
- Brief Description of the Drawings (if filed)
- Detailed Description
- Claim(s)
- Abstract of the Disclosure

4. Drawing(s) (35 U.S.C. 113) [Total Sheets 7]5. Oath or Declaration [Total Pages 2]a. Newly executed (original or copy)b. Copy from a prior application (37 CFR 1.63(d))
(for continuation/divisional with Box 18 completed)i. **DELETION OF INVENTOR(S)**Signed statement attached deleting inventor(s)
named in the prior application, see 37 CFR
1.63(d)(2) and 1.33(b).6. Application Data Sheet. See 37 CFR 1.76ADDRESS TO:
Commissioner for Patents
Mail Stop Patent Application
P. O. Box 1450
Alexandria VA 22313-1450

- COPY**
7. CD-ROM or CD-R in duplicate, large table of Computer Program (Appendix)
8. Nucleotide and/or Amino Acid Sequence Submission
(if applicable, all necessary)
- a. Computer Readable Form (CRF)
- b. Specification Sequence Listing on:
 - i. CD-ROM or CD-R (2 copies); or
 - ii. Paper
- c. Statements verifying identity of above copies

ACCOMPANYING APPLICATION PARTS

9. Assignment Papers (cover sheet & document(s))
10. 37 CFR 3.73(b) Statement Power of Attorney
(when there is an assignee)
11. English Translation Document (if applicable)
12. Information Disclosure Statement (IDS)/PTO-1449 Copies of IDS Citations
13. Preliminary Amendment
14. Return Receipt Postcard (MPEP 503)
(Should be specifically itemized)
15. Certified Copy of Priority Document(s)
(if foreign priority is claimed)
16. Nonpublication Request under 35 U.S.C. 122
(b)(2)(B)(i). Applicant must attach form PTO/SB/35
or its equivalent.
17. Other:

18. If a CONTINUING APPLICATION, check appropriate box, and supply the requisite information below and in a preliminary amendment, or in an Application Data Sheet under 37 CFR 1.76:

 Continuation Divisional Continuation-in-part (CIP) of prior application No.: _____ / _____

Prior application information: Examiner _____ Group / Art Unit: _____

For CONTINUATION OR DIVISIONAL APPS only: The entire disclosure of the prior application, from which an oath or declaration is supplied under Box 5b, is considered a part of the disclosure of the accompanying continuation or divisional application and is hereby incorporated by reference. The incorporation can only be relied upon when a portion has been inadvertently omitted from the submitted application parts.

19. CORRESPONDENCE ADDRESS

| | | |
|---|--------|--|
| <input checked="" type="checkbox"/> Customer Number or Bar Code Label | 020322 | or <input type="checkbox"/> Correspondence address below <i>(Insert Customer No. or Attach bar code label here)</i> |
|---|--------|--|

| | | | |
|---------|-----------------------|-----------|--------------|
| Name | Cynthia L. Pillote | | |
| | Snell & Wilmer L.L.P. | | |
| Address | One Arizona Center | | |
| | 400 East Van Buren | | |
| City | Phoenix | State | Arizona |
| Country | US | Telephone | 602-382-6296 |
| | | Zip Code | 85004-2202 |
| | | Fax | 602-382-6070 |

| | | | |
|-------------------|---|-----------------------------------|--------------------|
| Name (Print/Type) | Cynthia L. Pillote | Registration No. (Attorney/Agent) | 42,999 |
| Signature | <i>Sandra O. Carty, Esq. # 41,655 Adm Cynthia Pillote</i> | | Date June 25, 2003 |

This collection of information is required by 37 CFR 1.53(b). The information is required to obtain or retain a benefit by the public which is to file (and by the USPTO to process) an application. Confidentiality is governed by 35 U.S.C. 122 and 37 CFR 1.14. This collection is estimated to take 12 minutes to complete, including gathering, preparing, and submitting the completed application form to the USPTO. Time will vary depending upon the individual case. Any comments on the amount of time you require to complete this form and/or suggestions for reducing this burden, should be sent to the Chief Information Officer, U.S. Patent and Trademark Office, U.S. Department of Commerce, P.O. Box 1450, Alexandria, VA 22313-1450. DO NOT SEND FEES OR COMPLETED FORMS TO THIS ADDRESS. SEND TO: Mail Stop Patent Application, Commissioner for Patents, P.O. Box 1450, Alexandria, VA 22313-1450.

Under the Paperwork Reduction Act of 1995, no persons are required to respond to a collection of information unless it displays a valid OMB control number.

FEE TRANSMITTAL for FY 2003

Effective 01/01/2003. Patent fees are subject to annual revision.

| | | | |
|--|--------------------------------|--------------|------------------|
| <input type="checkbox"/> Applicant claims small entity status. See 37 CFR 1.27 | TOTAL AMOUNT OF PAYMENT | (\\$) | \\$874.00 |
|--|--------------------------------|--------------|------------------|

Complete if Known

| | |
|----------------------|---------------------|
| Application Number | TBA |
| Filing Date | June 25, 2003 |
| First Named Inventor | CHUANG, Cheng-Chieh |
| Examiner Name | TBA |
| Group Art Unit | TBA |
| Attorney Docket No. | 39524.6900 |

METHOD OF PAYMENT (check all that apply)

Check Credit card Money Order Other None

Deposit Account:

Deposit Account Number **19-2814**

Deposit Account Name **Snell & Wilmer**

The Commissioner is authorized to: (check all that apply)

- Charge fee(s) indicated below Credit any overpayments
- Charge any additional fee(s) during the pendency of this application
- Charge fee(s) indicated below, except for the filing fee to the above-identified deposit account.

FEE CALCULATION**1. BASIC FILING FEE**

| Large Entity | Small Entity | Fee Code (\$) | Fee Code (\$) | Fee Description | Fee Paid |
|---------------------|--------------|---------------|---------------|------------------------|----------|
| 1001 | 750 | 2001 | 375 | Utility filing fee | 750.00 |
| 1002 | 330 | 2002 | 165 | Design filing | |
| 1003 | 520 | 2003 | 260 | Plant filing fee | |
| 1004 | 750 | 2004 | 375 | Reissue filing | |
| 1005 | 160 | 2005 | 80 | Provisional filing fee | |
| SUBTOTAL (1) | | (\\$) | | \\$750.00 | |

2. EXTRA CLAIM FEES FOR UTILITY AND REISSUE

| | Extra Claims | Fee from below | Fee Paid |
|--------------------|--------------|-----------------|----------|
| Total Claims | 20 -20** = 0 | X 18.00 = 0.00 | = 0.00 |
| Independent Claims | 4 -3** = 1 | X 84.00 = 84.00 | = 84.00 |
| Multiple Dependent | | | |

| Large Entity | Small Entity | Fee Description |
|---------------------|--------------|---|
| 1202 | 18 | 2202 9 Claims in excess of 20 |
| 1201 | 84 | 2201 42 Independent claims in excess of 3 |
| 1203 | 280 | 2203 140 Multiple dependent claim, if not paid |
| 1204 | 84 | 2204 42 ** Reissue independent claims over original patent |
| 1205 | 18 | 2205 9 ** Reissue claims in excess of 20 and over original patent |
| SUBTOTAL (2) | | (\\$) \\$84.00 |

**or number previously paid, if greater; For Reissues, see above

FEE CALCULATION (continued)**3. ADDITIONAL FEES**

| Large Entity | Small Entity | Fee Code (\$) | Fee Code (\$) | Fee Description | Fee Paid |
|---------------------|--------------|---------------|---------------|--|----------|
| 1051 | 130 | 2051 | 65 | Surcharge - late filing fee or oath | |
| 1052 | 50 | 2052 | 25 | Surcharge - late provisional filing fee or cover sheet | |
| 1053 | 130 | 1053 | 130 | Non - English specification | |
| 1812 | 2,520 | 1812 | 2,520 | For filing a request for ex parte reexamination | |
| 1804 | 920* | 1804 | 920* | Requesting publication of SIR prior to Examiner action | |
| 1805 | 1,840* | 1805 | 1,840* | Requesting publication of SIR after Examiner action | |
| 1251 | 110 | 2251 | 55 | Extension for reply within first month | |
| 1252 | 410 | 2252 | 205 | Extension for reply within second month | |
| 1253 | 930 | 2253 | 465 | Extension for reply within third month | |
| 1254 | 1,450 | 2254 | 725 | Extension for reply within fourth month | |
| 1255 | 1,970 | 2255 | 985 | Extension for reply within fifth month | |
| 1401 | 320 | 2401 | 160 | Notice of Appeal | |
| 1402 | 320 | 2402 | 160 | Filing a brief in support of an appeal | |
| 1403 | 280 | 2403 | 140 | Request for oral hearing | |
| 1451 | 1,510 | 1451 | 1,510 | Petition to institute a public use proceeding | |
| 1452 | 110 | 2452 | 55 | Petition to revive - unavoidable | |
| 1453 | 1,300 | 2453 | 650 | Petition to revive - unintentional | |
| 1501 | 1,300 | 2501 | 650 | Utility issue fee (or reissue) | |
| 1502 | 470 | 2502 | 235 | Design issue fee | |
| 1503 | 630 | 2503 | 315 | Plant issue fee | |
| 1460 | 130 | 1460 | 130 | Petitions to the Commissioner | |
| 1807 | 50 | 1807 | 50 | Processing fee under 37 CFR § 1.17(q) | |
| 1806 | 180 | 1806 | 180 | Submission of Information Disclosure Statement | |
| 8021 | 40 | 8021 | 40 | Recording each patent assignment per property (times number of properties) | 40.00 |
| 1809 | 750 | 2809 | 375 | Filing a submission after final rejection (37 CFR § 1.129(a)) | |
| 1810 | 750 | 2810 | 375 | For each additional invention to be examined (37 CFR § 1.129(b)) | |
| 1801 | 750 | 2801 | 375 | Request for Continued Examination (RCE) | |
| 1802 | 900 | 1802 | 900 | Request for expedited examination of a design application | |
| Other fee (specify) | | | | | |

*Reduced by Basic Filing Fee Paid

SUBTOTAL (3)**(\\$)** **\\$40.00**

Complete (if applicable)

| | | | | | |
|---------------------|--|--------------------------------------|--------|---------------|--------------|
| SUBMITTED BY | Cynthia L. Pillote | Registration No. (Attorney/Agent) | 42,999 | Telephone | 602-382-6296 |
| Signature | <i>Sant O. Ceph, re #41,655, for (y, this P,ilot</i> | | Date | June 25, 2003 | |

WARNING: Information on this form may become public. Credit card information should not be included on this form. Provide credit card information and authorization on PTO-2038.

This collection of information is required by 37 CFR 1.17 and 1.27. The information is required to obtain or retain a benefit by the public which is to file (and by the USPTO to process) an application. Confidentiality is governed by 35 U.S.C. 122 and 37 CFR 1.14. This collection is estimated to take 12 minutes to complete, including gathering, preparing, and submitting the completed application form to the USPTO. Time will vary depending upon the individual case. Any comments on the amount of time you require to complete this form and/or suggestions for reducing this burden, should be sent to the Chief Information Officer, U.S. Patent and Trademark Office, U.S. Department of Commerce, P.O. Box 1450, Alexandria, VA 22313-1450. DO NOT SEND FEES OR COMPLETED FORMS TO THIS ADDRESS. SEND TO: Commissioner for Patents, P.O. Box 1450, Alexandria, VA 22313-1450.

If you need assistance in completing the form, call 1-800-PTO-9199 (1-800-786-9199) and select option 2.

PATENTS ONLY

Tab settings → → → ↓

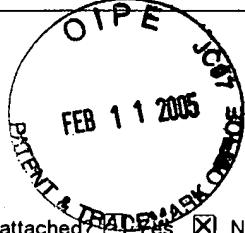
COPY ↓ ↓ ↓

To the Honorable Director of the United States Patent and Trademark Office: Please record the attached original documents or copy thereof.

1. Name of conveying party(ies):

CHUANG, Cheng-Chieh
 CHIU, Hsien-Tsung
 HUANG, Chiu-An

2. Name and address of receiving party(ies):

Name: BENQ CORPORATIONAddress: No. 157, Shan-Ying Rd.Additional names(s) of conveying party(ies) attached? Yes No

3. Nature of conveyance:

- | | |
|--|---|
| <input checked="" type="checkbox"/> Assignment | <input type="checkbox"/> Merger |
| <input type="checkbox"/> Security Agreement | <input type="checkbox"/> Change of Name |
| <input type="checkbox"/> Other _____ | |

Execution Date: June 20, 2003City: Kweishan State/Prov.: TaoyuanCountry: Taiwan ZIP: _____Additional name(s) & address(es) attached? Yes No

4. Application number(s) or patent numbers(s):

If this document is being filed together with a new application, the execution date of the application is: June 25, 2003

Patent Application No.

Filing date

B. Patent No.(s)

Additional numbers attached? Yes No

5. Name and address of party to whom correspondence concerning document should be mailed:

Name: Cynthia L. PilloteRegistration No. 42,999Address: Snell & Wilmer L.L.P.One Arizona Center400 East Van BurenCity: Phoenix State/Prov.: ArizonaCountry: US ZIP: 85004-22026. Total number of applications and patents involved: 17. Total fee (37 CFR 3.41): \$ 40.00 Enclosed - Any excess or insufficiency should be credited or debited to deposit account Authorized to be charged to deposit account

8. Deposit account number:

19-2814

(Attach duplicate copy of this page if paying by deposit account)

DO NOT USE THIS SPACE

9. Statement and signature.

To the best of my knowledge and belief, the foregoing information is true and correct and any attached copy is a true copy of the original document.

Cynthia L. Pillote

Name of Person Signing

Signature

June 25, 2003

Date

Total number of pages including cover sheet, attachments, and document: 4

COPY

UTILITY PATENT

ASSIGNMENT

WHEREAS, the undersigned inventors (hereinafter singly and collectively, "ASSIGNOR") of the addresses indicated below, have invented

DISC APPARATUS WITH DEVICE FOR PREVENTING EJECTION OF A
CRACKED DISC

for which application for Letters Patent of the United States [is being filed concurrently herewith] [was filed as U.S. Serial No. _____ on _____];

AND WHEREAS, BenQ Corporation (hereinafter "ASSIGNEE"), a Taiwan corporation having its principal place of business at No. 157, Shan-Ying Rd., Kweishan, Taoyuan, Taiwan is desirous of acquiring an interest therein;

NOW, THEREFORE, for good and valuable consideration, the receipt and sufficiency of which are hereby acknowledged, ASSIGNOR by these presents does sell, assign and transfer unto ASSIGNEE, its successors, assigns and legal representatives, the full and exclusive right to the invention as described in the aforesaid application, in the United States and all foreign countries, together with the right of priority under the International Convention for the Protection of Industrial Property, Inter-American Convention Relating to Patents, Designs and Industrial Models, and any other international agreements to which the United States adheres, and hereby authorizes and requests the Commissioner of Patents to issue said Letters Patent to ASSIGNEE, for the sole use and benefit of ASSIGNEE, its successors, assigns and legal representatives,

AND HEREBY AGREES to transfer a like interest upon request of ASSIGNEE, its successors, assigns and legal representatives, and without further remuneration, in and to any improvements and applications for patents based thereon, growing out of or relating to the invention; and to provide all reasonable assistance and execute any papers deemed essential by ASSIGNEE, its successors, assigns and legal representatives, to ASSIGNEE's full protection and title in and to the invention hereby transferred,

AGREEING, FURTHERMORE, upon request of ASSIGNEE, and without further remuneration, to execute any and all papers desired by ASSIGNEE for the filing and granting of foreign applications and the perfecting of title thereto in ASSIGNEE.

EXECUTED as of the date(s) written below by ASSIGNOR:

Docket No. 39524.6900

I hereby claim the benefit under Title 35 U.S.C. Section 119(e) of any United States provisional application(s) listed below.

(Application Serial No.)

(Filing Date)

(Application Serial No.)

(Filing Date)

(Application Serial No.)

(Filing Date)

I hereby claim the benefit under Title 35 U.S.C. Section 120 of any United States application(s), or Section 365(c) of any PCT International application designating the United States, listed below and, insofar as the subject matter of each of the claims of this application is not disclosed in the prior United States or PCT International application in the manner provided by the first paragraph of 35 U.S.C. Section 112, I acknowledge the duty to disclose to the United States Patent and Trademark Office all information known to me to be material to patentability as defined in Title 37, C. F. R., Section 1.56 which became available between the filing date of the prior application and the national or PCT International filing date of this application:

(Application Serial No.)

(Filing Date)

(Status)
(patented, pending, abandoned)

(Application Serial No.)

(Filing Date)

(Status)
(patented, pending, abandoned)

(Application Serial No.)

(Filing Date)

(Status)
(patented, pending, abandoned)

I hereby declare that all statements made herein of my own knowledge are true and that all statements made on information and belief are believed to be true; and further that these statements were made with the knowledge that willful false statements and the like so made are punishable by fine or imprisonment, or both, under Section 1001 of Title 18 of the United States Code and that such willful false statements may jeopardize the validity of the application or any patent issued thereon.

| | |
|-------------------------------------|--|
| Full name of sole or first inventor | CHUANG, Cheng-Chieh |
| Sole or first inventor's signature | <i>Chuang, Cheng - Chieh</i> |
| Residence | 3F., No. 15, Alley 18, Lane 61, Minsheng St., Sanchong City, Taipei County, Taiwan |
| Citizenship | Taiwan |
| Post office address | c/o BenQ Corporation, No. 157, Shan-Ying Rd., Kweishan, Taoyuan, Taiwan |

| | |
|------------------------------------|---|
| Full name of second inventor | CHIU, Hsien-Tsung |
| Sole or first inventor's signature | <i>Chiu, Hsien-Tsung</i> |
| Residence | No. 9, Lane 696, Zihciang S. Rd., Gueishan Township, Taoyuan County, Taiwan |
| Citizenship | Taiwan |
| Post office address | c/o BenQ Corporation, No. 157, Shan-Ying Rd., Kweishan, Taoyuan, Taiwan |

| | |
|------------------------------------|--|
| Full name of third inventor | HUANG, Chiu-An |
| Sole or first inventor's signature | <i>huang, chiu - An</i> |
| Residence | No. 18-1, Longyan Village, Baojhong Township, Yunlin County, Taiwan |
| Citizenship | Taiwan |
| Post office address | c/o BenQ Corporation, No. 157, Shan-Ying Rd., Kweishan, Taoyuan, Taiwan |

COPY
Docket No. 39524-6900

**Declaration For Patent Application
English Language Declaration**

As a below named inventor, I hereby declare that:

My residence, post office address and citizenship are as stated below next to my name.

I believe I am the original, first and sole inventor (if only one name is listed below) or an original, first and joint inventor (if plural names are listed below) of the subject matter which is claimed and for which a patent is sought on the invention entitled

DISC APPARATUS WITH DEVICE FOR PREVENTING EJECTION OF A

CRACKED DISC

the specification of which

(check one)

is attached hereto.

was filed on _____ as United States Application No. or PCT International Application Number _____
and was amended on _____ (if applicable)

I hereby state that I have reviewed and understand the contents of the above identified specification, including the claims, as amended by any amendment referred to above.

I acknowledge the duty to disclose to the United States Patent and Trademark Office all information known to me to be material to patentability as defined in Title 37, Code of Federal Regulations, Section 1.56.

I hereby claim foreign priority benefits under Title 35, United States Code, Section 119 (a-d) or Section 365(b) of any foreign application(s) for patent or inventor's certificate, or Section 365(a) of any PCT international application which designated at least one country other than the United States, listed below and have also identified below, by checking the box, any foreign application for patent or inventor's certificate or PCT international application having a filing date before that of the application on which priority is claimed:

| Prior Foreign Application(s) (Number) | (Month/Day/Year Filed) | (Country) | Priority Claimed | |
|--|------------------------|-----------|---------------------|----|
| | | | Yes | No |
| 091113858 | 6/25/2002 | Taiwan | v | |
| | | | | |
| | | | | |
| | | | | |

| <u>INVENTOR'S NAME</u> | <u>ADDRESS</u> | <u>SIGNATURE</u> |
|------------------------|---|----------------------------|
| CHUANG, Cheng-Chieh | 3F., No. 15, Alley 18, Lane 61, Minsheng St., Sanchong City, Taipei County, Taiwan | <i>Chuang, Cheng-Chieh</i> |

Date 6/20/03

| <u>INVENTOR'S NAME</u> | <u>ADDRESS</u> | <u>SIGNATURE</u> |
|------------------------|--|--------------------------|
| CHIU, Hsien-Tsung | No. 9, Lane 696, Zihciang S. Rd., Gueishan Township, Taoyuan County, Taiwan | <i>Chiu, Hsien Tsung</i> |

Date 6/20-03

| <u>INVENTOR'S NAME</u> | <u>ADDRESS</u> | <u>SIGNATURE</u> |
|------------------------|--|-----------------------|
| HUANG, Chiu-An | No. 18-1, Longyan Village, Baojhong Township, Yunlin County, Taiwan | <i>Huang, Chiu-An</i> |

Date 6/20-03

COPY

Title: DISC APPARATUS WITH DEVICE FOR PREVENTING EJECTION OF A CRACKED DISC

Inventors: Cheng-Chieh CHUANG, Hsien-Tsung CHIU, and Chiu-An HUANG

[0001] This application claims priority of Taiwan Patent Application No. 091113858 filed on June 25, 2002.

Field of Invention

[0002] The present invention relates to an apparatus for preventing a cracked disc from flying out of a disc data reading apparatus and a disc data reading device including the apparatus.

Background of the Invention

[0003] In past few years, the rotation speed of disc data reading apparatuses has rapidly increased. However, because of the unstable qualities of re-writable discs and increased rotation speed, the discs are easier to crack during rotation. In addition, accidents caused by ejected cracked discs have also rapidly increased. Hence how to prevent the cracked discs flying out of the disc data reading apparatuses is important when designing the structure of the disc data reading apparatuses.

[0004] Generally, the ejected cracked discs pass through a chink between the tray and the housing and damage the panel and cover. Conventionally, the front edge of the housing is bent downward to block the cracked discs. However, the energy generated while the discs crack usually presses the tray down, and then the cracked discs are able to pass from the underside of the front edge of the housing.

[0005] To solve this problem, some support points are disposed under the tray. While the energy forces the tray downward, the support points touch the chassis and receive a reaction force for limiting the downward displacement of the tray.

[0006] However, besides the tray, the energy also forces the housing upward. Therefore the problem of ejected cracked discs still exists.

Summary of the Invention

[0007] It is an aspect of the present invention to provide an apparatus for use with a disc data reading apparatus and preventing a cracked disc from flying out of the apparatus.

[0008] It is another aspect of the present invention to limit the displacement of the housing while the disc cracks.

[0009] It is another aspect of the present invention to limit the displacement of the tray while the disc cracks.

[0010] The present invention provides an apparatus for use with a disc data reading apparatus. In the first embodiment, the apparatus of the present invention includes a housing and a panel. The panel selectively connects with the housing. The housing has a protrusion, which connects with a front edge of the housing. The panel has a first surface corresponding to the protrusion. While the disc within the disc data reading apparatus cracks, a force existing between the protrusion and the first surface limits relative displacement of the panel and the housing for preventing a cracked disc flying out.

[0011] In addition, the housing includes a stopper for blocking the cracked disc. The stopper extends downward from the front edge of the housing.

[0012] The present invention further includes a tray and a chassis. The tray includes at least one support point. As the disc becomes cracked, the support point touches against the

chassis and receives a reaction force limiting relative displacement between the tray and the chassis.

[0013] In the second embodiment, differing from the first embodiment, an inner side edge of the panel connects the protrusion, and the housing has the first surface corresponding to the protrusion.

[0014] The present invention further provides a disc data reading apparatus using the apparatus mentioned above.

[0015] This and other aspects of the present invention will become clear to those of ordinary skills in the art after having read the following detailed description of the preferred embodiments illustrated in the various figures and drawings.

Brief Description of the Drawings

[0016] Fig. 1 shows a perspective view of the disc data reading apparatus;

[0017] Fig. 2a shows a front view of the first embodiment of the present invention;

[0018] Fig. 2b shows a cross-section profile of the embodiment of Fig. 2a taken along line I-I';

[0019] Fig. 2c shows a magnification view of a portion of the profile illustrated in Fig. 2b;

[0020] Fig. 3 shows the housing in accordance with a first embodiment;

[0021] Fig. 4a shows a bottom view of the tray;

[0022] Fig. 4b shows a perspective view of the chassis;

[0023] Fig. 5a shows a side view of the first embodiment;

[0024] Fig. 5b shows a profile taken along line II-II' of Fig. 5a; and

[0025] Fig. 6 shows a second embodiment of the present invention.

Detailed Description

[0026] The present invention provides an apparatus for use with a disc data reading apparatus 100 shown in Fig. 1. The apparatus of the present invention prevents a cracked disc from flying out when a disc within the disc data reading apparatus 100 cracks. The disc data reading apparatus 100 mentioned here may include a CD-ROM, a CD-R, a CD-RW, a DVD player, or other resemblances. The following description discloses several preferred embodiments of the present invention.

[0027] **First embodiment**

[0028] The description hereafter refers to Fig. 2a, Fig. 2b, and Fig. 2c. The apparatus of the present invention includes a housing 200 and a panel 300. The housing 200 has a protrusion 400, which connects with a front edge 220 of the housing 200. The protrusion 400 may have a slab shape, a spherical shape, a half-spherical shape, or other resemblances. In the embodiment illustrated in Fig. 2c, the protrusion 400 extends downward from the front edge 220 for a first interval 420, and then turns toward the panel 300. In other words, the protrusion 400 has an L-shaped profile. However, in other embodiments, the protrusion 400 may extend from the edge 220 and directly toward the panel 300. In addition, the protrusion 400 horizontally extend toward the panel 300; however, in other embodiments, the protrusion 400 may extend along an inclination.

[0029] The panel 300 selectively connects with the front edge 220 of the housing 200. In this embodiment, the panel 300 is removably connected with the front edge 220. The panel 300 includes a first surface 520 corresponding to the protrusion 400. Particularly, the first surface 520 corresponds to and contacts a side of the protrusion 400 when the housing 200 connects the panel 300. When a disc within the disc data reading apparatus 100 cracks, the concurrently generated energy forces the housing 200 and a tray 600 oppositely move or deform. The stopper 240 blocks most of the cracked pieces, and the other pieces fly toward

the panel 300 through a chink 440 formed by the stopper 240 and the tray 600. Those escaped pieces then force the panel 300 to move upward and the cover 800 to move downward so as to broaden the seam between the panel 300 and the cover 800. When the panel 300 and the cover 800 oppositely move, the first surface 520 contacts with the protrusion 400. The contact generates a force to limit relative displacement between the panel 300 and the cover 800 for preventing the cracked pieces flying out. In addition, an extension 522 of the first surface 520 overlaps the cover 800 with a specific interval X, and a chink 803, which is smaller than X, is between the cover 800 and the panel 300. While the cover 800 moves downward and contacts with the panel 300 to eliminate the chink 803, the extension 522 still overlaps the cover 800 to block the cracked pieces.

[0030] As Fig. 2c shows, the panel 300 further has a depression 500. In this embodiment, the depression 500 is a slot, which is parallel with the surface of the disc. The first surface 520 is a sidewall of the depression 500. When the housing 200 connects with the panel 300, the depression 500 receives the protrusion 400, and the sidewall of the depression 500, i.e. the first surface 520, corresponds to a side of the protrusion 400.

[0031] As Fig. 3 shows, the stopper 240 connects with the front edge 220 of the housing 200 and extends downward. The stopper 240 mentioned above may include a plate structure, a net structure, or other similar structures. In this embodiment, the stopper 240 is a plate structure and aligned with the protrusion 400 alternately.

[0032] As Fig. 4a, Fig. 4b, Fig. 5a and Fig. 5b show, the present invention further includes a tray 600 for holding the disc and a chassis 700 for supporting the tray 600. The tray 600 has at least one support point 620. The support point 620 mentioned above may include various kinds of appearances, such as sphere, half-sphere, cross, or other resemblances. As the disc becomes cracked, the support point 620 touches against the chassis 700 and receives a reaction force limiting relative displacement between the tray 600 and the chassis 700. In

other embodiments, however, the support point 620 may be arranged on the chassis 700 and touch against the tray 600. Moreover, the support points 620 may be arranged both on the tray 600 and the chassis 700 and contact with each other to provide a reaction.

[0033] **Second Embodiment**

[0034] As Fig. 6 shows, the difference between the first and the second embodiments is that the panel 300 has a protrusion 400 and the housing 200 has the first surface 540 corresponding to the protrusion 400. The protrusion 400 extends from a side edge 320 of the panel 300. The protrusion 400 may have a slab shape, a spherical shape, a half-spherical shape, or other resemblances. As Fig. 6 shows, the protrusion 400 extends from the side edge 320 and toward the housing 200. In addition, the protrusion 400 horizontally extend toward the panel 300, however, in another embodiments, the protrusion 400 may extend along an inclination.

[0035] The housing 200 selectively connects with the side edge 320 of the panel 300. In this embodiment, the housing 200 is removably connected with the side edge 320. The first surface 540 corresponds to and contact with a side surface of the protrusion 400 when the housing 200 connects with the panel 300. When a disc within the disc data reading apparatus 100 cracks, the concurrently generated energy forces the housing 200 and a tray 600 respectively move or deform in opposite directions. In the meantime, the first surface 540 contacts with the protrusion 400. The contact generates a force to limit relative displacement between the panel 300 and the housing 200 for preventing the cracked pieces from flying out.

[0036] As Fig. 6 shows, the housing 200 further has a depression 500. In this embodiment, the depression 500 is a slot, which is parallel with the surface of the disc. The first surface 540 is a sidewall of the depression 500. When the housing 200 connects with

the panel 300, the depression 500 receives the protrusion 400, and the sidewall of the depression 500, i.e. the first surface 540, corresponds to a side surface of the protrusion 400.

[0037] Those skilled in the art will readily observe that numerous modifications and alterations of the device may be made within the teaching of the invention. Accordingly, the above disclosure should be construed as limited only by the metes and bounds of the appended claims.

Claims

1. An apparatus for use with a disc data reading apparatus, comprising:
 - a housing having a front edge and a protrusion connected to the front edge; and
 - a panel, the panel being selectively connected to the front edge, the panel having a first surface corresponding to the protrusion;wherein, a force existing between the protrusion and the first surface limits relative displacement between the panel and the housing for preventing a cracked disc flying out of the disc data reading apparatus.
2. The apparatus of claim 1, wherein the panel further comprises a depression, the first surface being a side-wall of the depression, as the housing is connected to the panel, the protrusion is received within the depression.
3. The apparatus of claim 1, wherein the housing further comprises a stopper, connected to the front edge and extending downward from the front edge, for blocking the cracked disc.
4. The apparatus of claim 1, further comprising a tray and a chassis, the tray including a support point, as the disc becomes cracked, the support point touches against the chassis and receives a reaction force limiting relative displacement between the tray and the chassis.
5. The apparatus of claim 1, further comprising a tray and a chassis, the chassis including a support point, as the disc becomes cracked, the support point touches

against the tray and receives a reaction force limiting relative displacement between the tray and the chassis.

6. An apparatus for use with a disc data reading apparatus, comprising:
a panel having a side edge and a protrusion connected to the side edge; and
a housing, the housing being selectively connected to the side edge, the housing having a first surface corresponding to the protrusion;
wherein, a force existing between the protrusion and the first surface limits relative displacement between the panel and the housing for preventing a cracked disc from flying out of the disc data reading apparatus.
7. The apparatus of claim 6, wherein the housing further comprises a depression, the first surface being a side-wall of the depression, as the housing is connected to the panel, the protrusion is received within the depression.
8. The apparatus of claim 6, wherein the housing further comprises a stopper, connected to the front edge and extending downward from the front edge, for blocking the cracked disc.
9. The apparatus of claim 6, further comprising a tray and a chassis, the tray including a support point, as the disc becomes cracked, the support point touches against the chassis and receives a reaction force limiting relative displacement between the tray and the chassis.

10. The apparatus of claim 6, further comprising a tray and a chassis, the chassis including a support point, as the disc becomes cracked, the support point touches against the tray and receives a reaction force limiting relative displacement between the tray and the chassis.
11. A disc data reading apparatus comprising:
 - a housing having an opening, the opening defining a front edge and the front edge extending to form a protrusion; and
 - a panel, the panel being selectively connected to the front edge, the panel including a first surface corresponding to the protrusion;
 - wherein, a force existing between the protrusion and the first surface limits relative displacement between the panel and the front edge for preventing a cracked disc flying out of the disc data reading apparatus.
12. The disc data reading apparatus of claim 11, wherein the panel further comprises a depression, the first surface being a side-wall of the depression, as the front edge is connected to the panel, the protrusion is received within the depression.
13. The disc data reading apparatus of claim 11, wherein the housing further comprises a stopper, connected to the front edge and extending downward from the front edge, for blocking the cracked disc.
14. The disc data reading apparatus of claim 11 further comprising a tray and a chassis, the tray including a support point, as the disc becomes cracked, the support point

touches against the chassis and receives a reaction force limiting relative displacement between the tray and the chassis.

15. The disc data reading apparatus of claim 11, further comprising a tray and a chassis, the chassis including a support point, as the disc becomes cracked, the support point touches against the tray and receives a reaction force limiting relative displacement between the tray and the chassis.
16. A disc data reading apparatus comprising:
 - a panel having a side edge provided with a protrusion; and
 - a housing having an opening, the opening defining a front edge selectively attaching to the side edge, the front edge being provided with a first surface corresponding to the protrusion;wherein, a force existing between the protrusion and the first surface limits relative displacement between the panel and the housing for preventing a cracked disc from flying out of the disc data reading apparatus.
17. The disc data reading apparatus of claim 16, wherein the housing further comprises a depression, the first surface being a side-wall of the depression, as the housing is connected to the panel, the protrusion is received within the depression.
18. The disc data reading apparatus of claim 16, wherein the housing further comprises a stopper, connected to the front edge and extending downward from the front edge, for blocking the cracked disc.

19. The disc data reading apparatus of claim 16 further comprising a tray and a chassis, the tray including a support point, as the disc becomes cracked, the support point touches against the chassis and receives a reaction force limiting relative displacement between the tray and the chassis.
20. The disc data reading apparatus of claim 16, further comprising a tray and a chassis, the chassis including a support point, as the disc becomes cracked, the support point touches against the tray and receives a reaction force limiting relative displacement between the tray and the chassis.

Abstract

[0038] An apparatus for preventing a cracked disc from flying out of a disc data reading apparatus is provided. The apparatus includes a housing and a panel. The panel selectively connects with the housing. The housing has a protrusion connecting with a front edge of the housing. The panel has a first surface corresponding to the protrusion. While the disc within the disc data reading apparatus cracks, a force existing between the protrusion and the first surface prevents a cracked disc flying out.

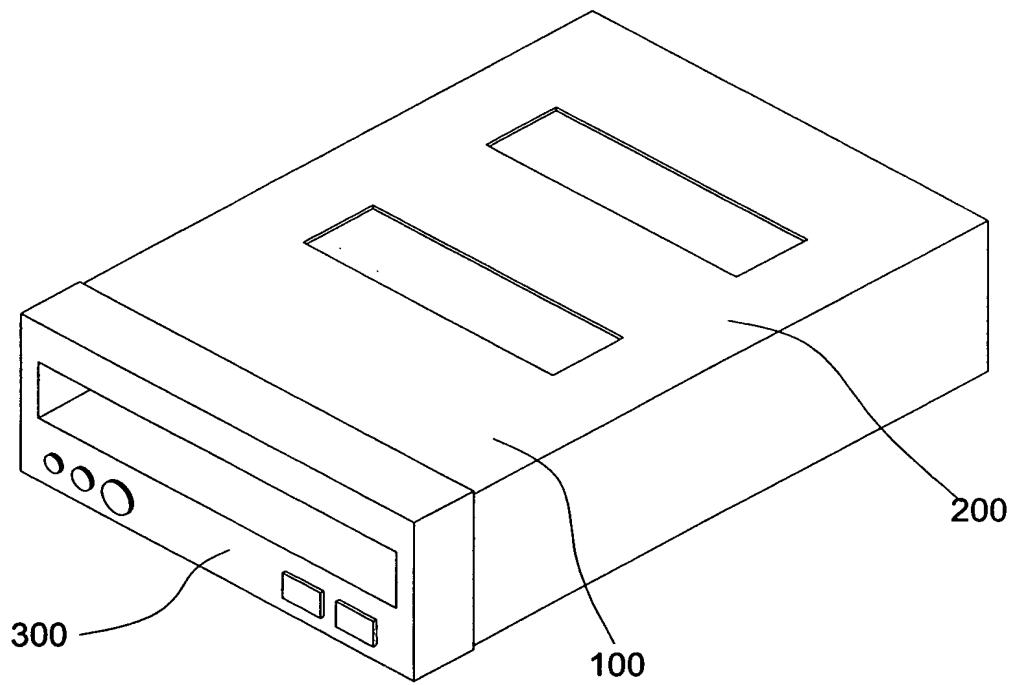


Fig.1

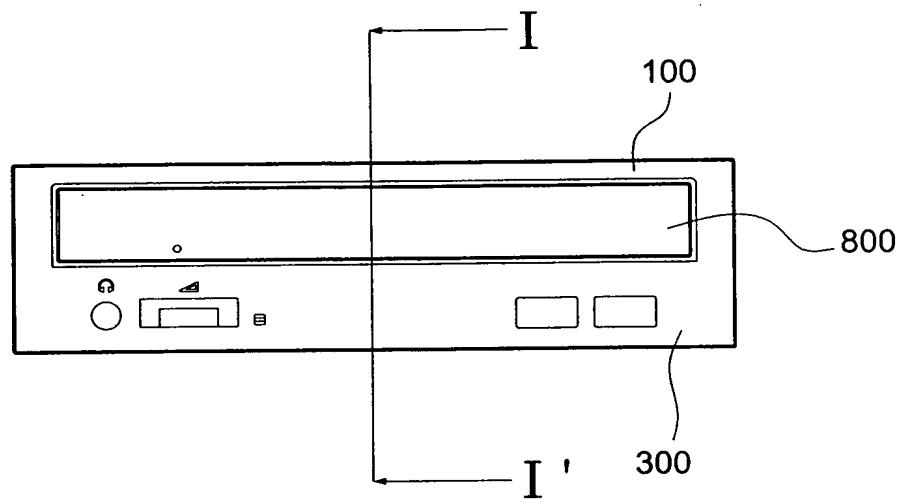


Fig.2a

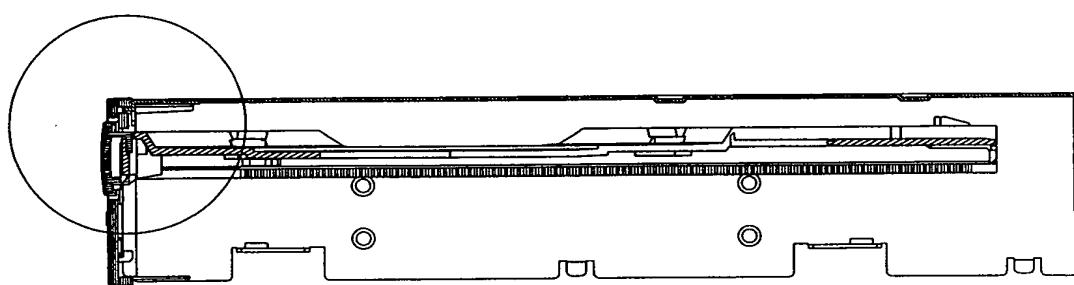


Fig.2b

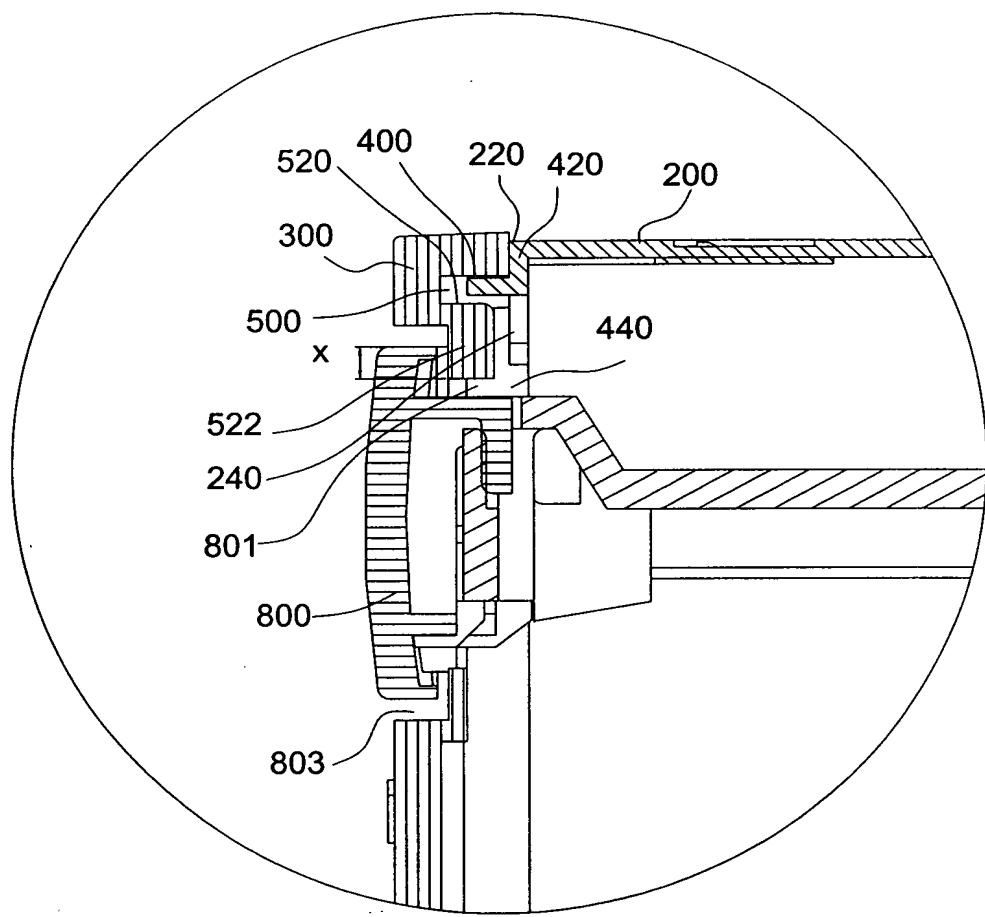


Fig.2c

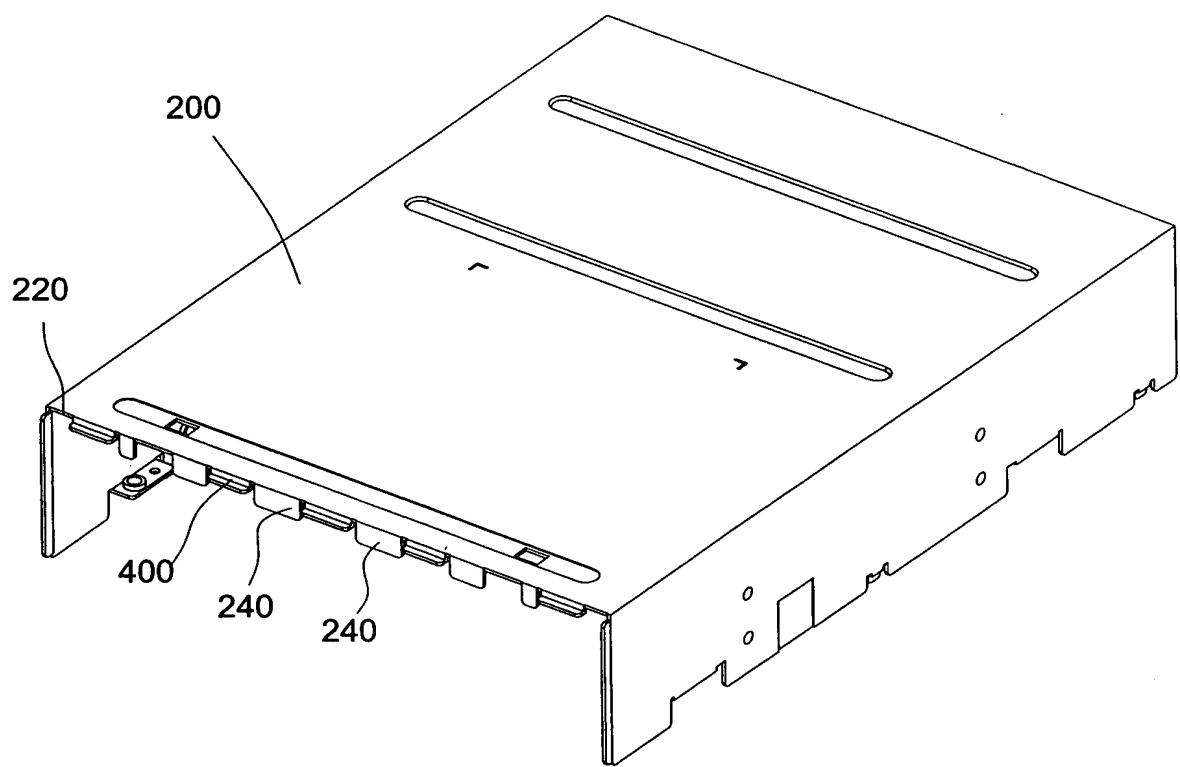


Fig.3

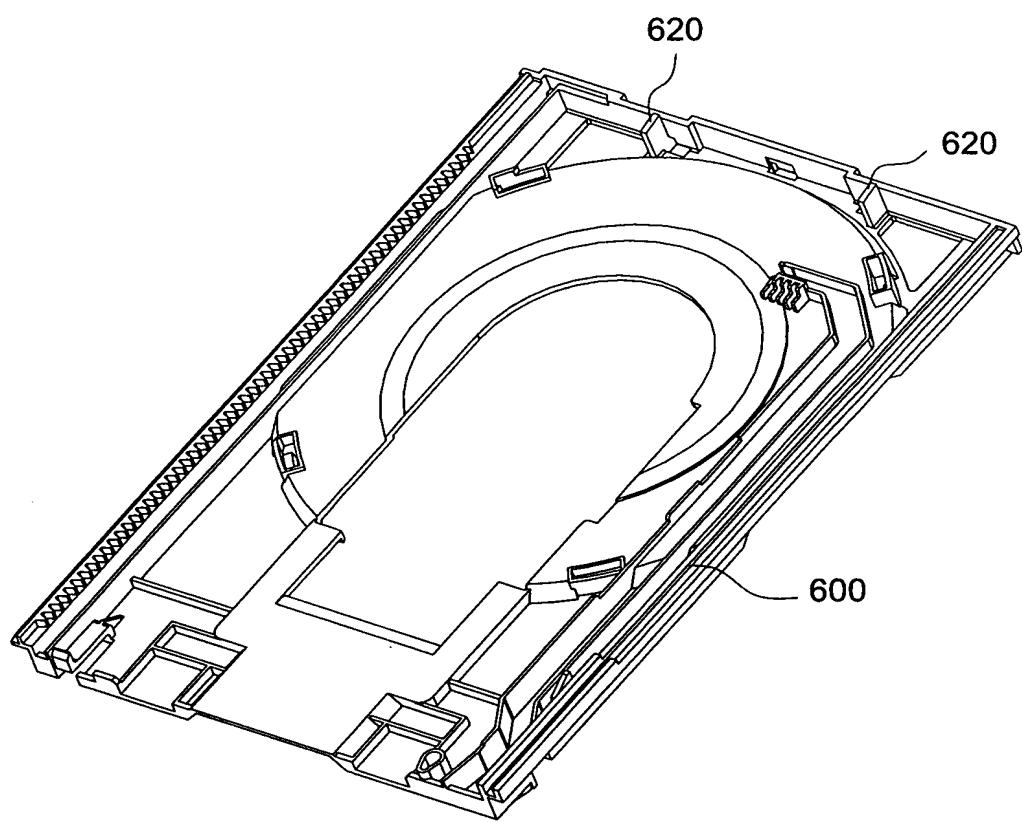


Fig.4a

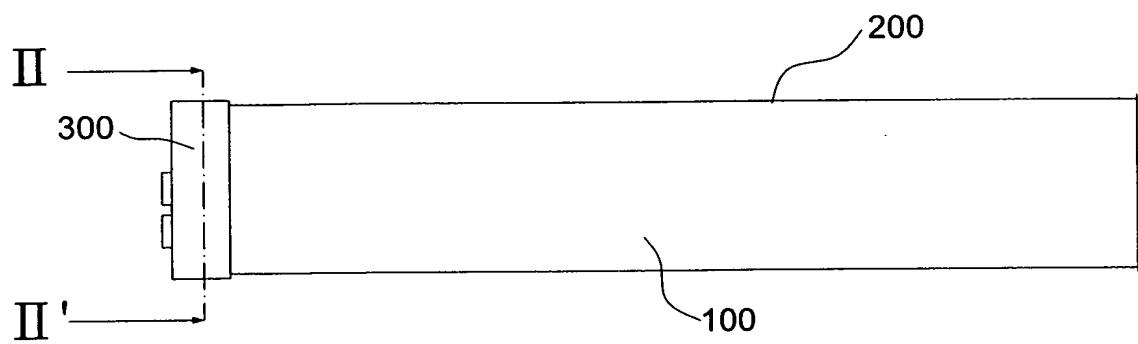


Fig.5a

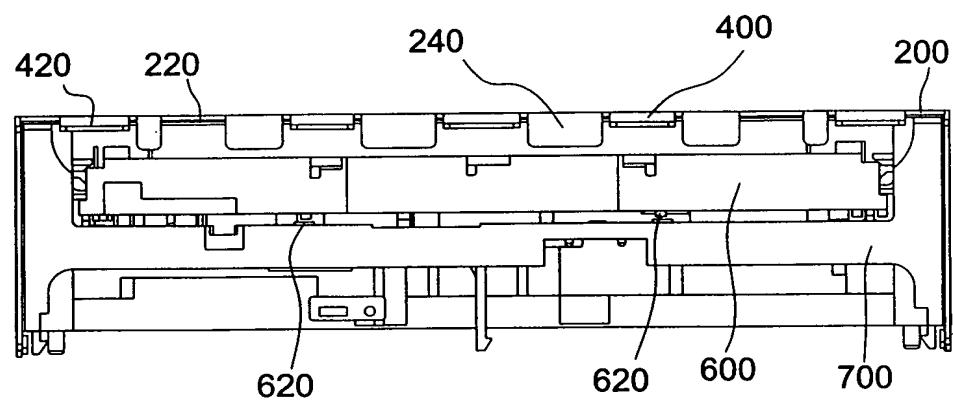


Fig.5b

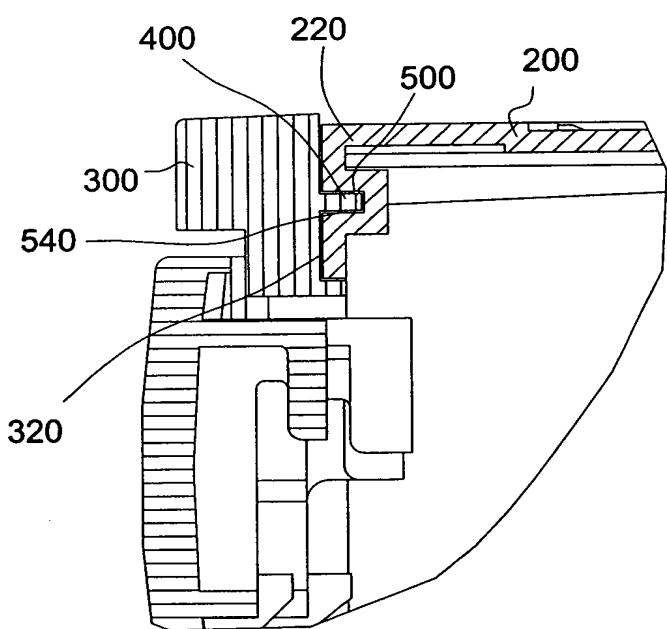


Fig.6

COPY

TRANSLATION OF CERTIFIED DOCUMENT

THIS IS TO CERTIFY THAT ANNEXED IS A TRUE COPY FROM THE RECORDS OF THIS OFFICE OF THE APPLICATION AS ORIGINALLY FILED WHICH IS IDENTIFIED HEREUNDER.

APPLICATION DATE: June 25, 2002

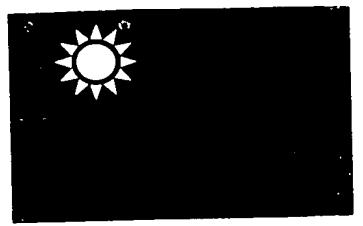
APPLICATION NUMBER: 091113858

(TITLE: Disc Apparatus with Device for Preventing a Cracked Disc from Shooting Out)

APPLICANT: BenQ Corporation

DIRECTOR GENERAL
陳明邦

ISSUE DATE: August 19, 2002
SERIAL NUMBER: 09111015874



中華民國經濟部智慧財產局

INTELLECTUAL PROPERTY OFFICE
MINISTRY OF ECONOMIC AFFAIRS
REPUBLIC OF CHINA

茲證明所附文件，係本局存檔中原申請案的副本，正確無訛，
其申請資料如下：

This is to certify that annexed is a true copy from the records of this office of the application as originally filed which is identified hereunder.

申請日：西元 2002 年 06 月 25 日
Application Date

申請案號：091113858
Application No.

申請人：明基電通股份有限公司
Applicant(s)

局長
Director General

陳明邦

發文日期：西元 2002 年 8 月
Issue Date

發文字號：09111015874
Serial No.

申請日期：91. 6. 25

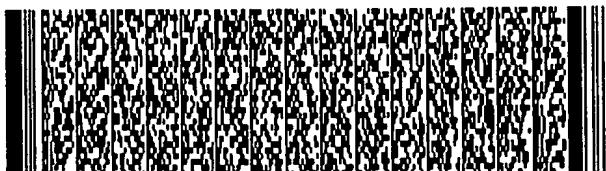
案號：91113858

類別：

(以上各欄由本局填註)

發明專利說明書

| | |
|------------------------------------|---|
| 一、 發明名稱 | 中文 光碟機防爆片裝置 |
| | 英文 Disc Apparatus with Device for Preventing A Cracked Disc Shooting Out |
| 二、 發明人 | 姓 名 (中文) 1. 莊政潔 2. 邱顯聰 3. 黃秋安 |
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| | 代表人 姓 名 (中文) 1. 李焜耀 |
| 代表人 姓 名 (英文) 1. K. Y. LEE | |

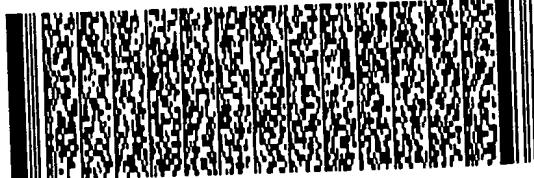
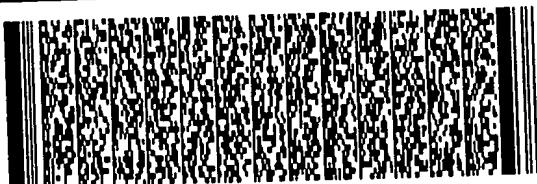


四、中文發明摘要 (發明之名稱：光碟機防爆片裝置)

本發明係關於一種供阻擋裂碟破片射出光碟機之裝置，以及包含此一裝置之碟片資料讀取裝置。本發明之置包含上蓋及面板。面板係選擇性地連結上蓋。上蓋具有突出部份，且突出部份係連接上蓋之前緣。面板具有第一面，且第一面係對應於突出部份。當裂碟破片產生時，突出部份與第一面間產生相對作用力以避免面板與上蓋產生相對位移，以阻擋裂碟破片向外射出。

英文發明摘要 (發明之名稱：Disc Apparatus with Device for Preventing A Cracked Disc Shooting Out)

The present invention relates to a device for preventing a cracked disc from shooting out and to a disc player including the device. The device includes a housing and a panel. The panel is selectively coupled to the housing. The housing includes a protrusion connecting to a front edge of the housing. The panel includes a first surface corresponding to the protrusion. When the disc cracks, a reacting force between the protrusion and the first surface prevents the



四、中文發明摘要 (發明之名稱：光碟機防爆片裝置)

英文發明摘要 (發明之名稱：Disc Apparatus with Device for Preventing A Cracked Disc Shooting Out)

cracked disc from shooting out due to the housing moving relative to the panel.



本案已向

國(地區)申請專利

申請日期

案號

主張優先權

無

有關微生物已寄存於

寄存日期

寄存號碼

無

五、發明說明 (1)

發明領域

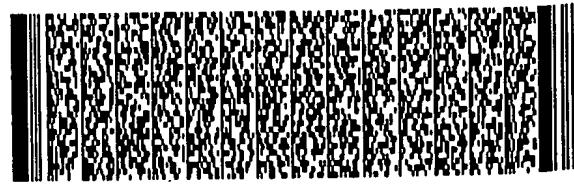
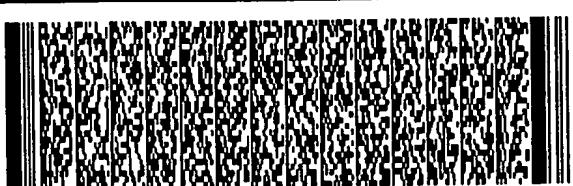
本發明係關於一種供阻擋裂碟破片射出光碟機之裝置，以及包含此一裝置之碟片資料讀取裝置。

發明背景

隨著光碟機倍數不斷提高，加上市面上的光碟片品參差不齊，光碟機運轉時光碟片破裂飛出傷人的事件時有所聞。因此如何防止破裂之光碟片飛出，就成為光碟機機構設計的重點之一。

一般而言，破裂之光碟片通常先通過托盤及上蓋之間的狹縫。再利用強大的衝擊力將面板上的外蓋破壞，以射出傷人。傳統上為防止裂碟破片射出，係將上蓋前緣向下彎折以形成阻擋裝置。利用上蓋之金屬鈑件之強度，阻擋裝置可將向外射出之裂碟破片擋下。

然而，因光碟片破裂時伴隨著巨大的能量。此一能量往往將光碟機之托盤向下擠壓，使裂碟破片經由上蓋的阻擋裝置下方向外射出。為解決此一問題，部份的光碟機係在托盤下方設計支點，且支點非常靠近甚至接觸到光碟機的底盤。當光碟片破裂而將托盤向下擠壓時，支點即藉由底盤的支撐以向上提供反力。如此托盤即可避免向下位移，使裂碟破片不致由阻擋裝置下方經過。



五、發明說明 (2)

然而此一設計仍未能完全防止裂碟破片向外射出，為光碟片破裂時產生的能量，亦會將上蓋向上推擠，使擋裝置產生位移。此時裂碟破片即可通過阻擋裝置的下向外射出。

發明概述

本發明之主要方面在提供一種裝置，供應用於碟片資料讀取裝置，以阻擋裂碟破片向外射出。

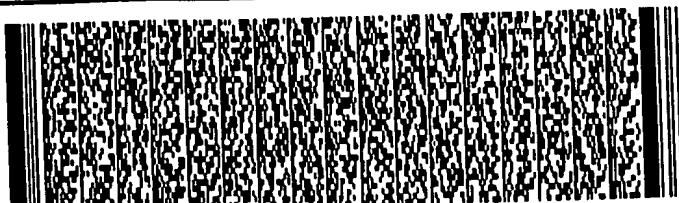
本發明之另一方面在提供一種裝置，供應用於碟片資料讀取裝置，以減少因裂碟破片而造成之上蓋位移。

本發明之另一方面在提供一種裝置，供應用於碟片資料讀取裝置，以減少因裂碟破片而造成之托盤位移。

本發明之再一方面在提供一種碟片資料讀取裝置，包含上述之裝置。

本發明係提供一種裝置，供應用於碟片資料讀取裝置。以阻擋裂碟破片向外射出。在第一實施例中，本發明之裝置包含上蓋及面板。面板係選擇性地連結上蓋。上蓋具有突出部份，且突出部份係連接上蓋之前緣。面板具有第一面，且第一面係對應於突出部份。當裂碟破片產生時，突出部份與第一面間產生相對作用力以避免面板與上蓋產生相對位移，以阻擋裂碟破片向外射出。

此外，上蓋進一步包含阻擋裝置，供阻擋裂碟破片。



五、發明說明 (3)

阻擋裝置係連接於前緣，且自前緣向下延伸。

又，本發明進一步包含托盤及底盤。托盤具有至少支點。當裂碟破片產生時，支點與底盤接觸並產生相對用力以避免托盤與底盤產生相對位移，以阻擋裂碟破片外射出。

在第二實施例中，其與第一實施例之主要不同處在於，面板之內側連接突出部份，而上蓋具有與突出部份對應之第二面。

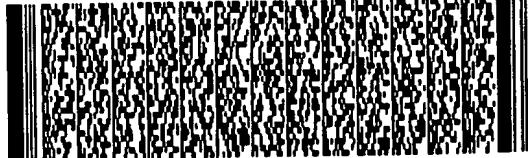
本發明同時提供一種碟片資料讀取裝置，包含上述防止裂碟破片射出之裝置。

發明之詳細說明

本發明係提供一種裝置，供應用於碟片資料讀取裝置100，如圖1所示。當碟片資料讀取裝置100所使用之碟片破裂時，本發明之裝置供阻擋裂碟破片向外射出。此處所言之碟片資料讀取裝置可以為CD光碟機、CD-R光碟機、DVD光碟機及其他可提供類似功能者。根據本發明之數個較佳具體實施例揭露如下。

第一實施例

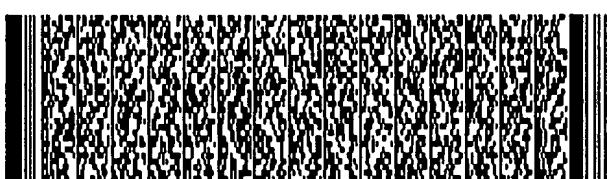
請參閱圖2a、圖2b及圖2c。本發明之裝置包含上蓋



五、發明說明 (4)

200 及面板 300。上蓋 200 具有突出部份 400，且突出部份 400 係連接上蓋 200 之前緣 220。此處所言之突出部份 400 可為一板狀突出、球狀突出、半球狀突出、及其他可提類似功能者。在如圖 2c 所示之實施例中，突出部份 400 由前緣 220 向下延伸第一長度 420，再轉為朝向面板 300 方向延伸。亦即突出部份 400 具有 L 形之剖面形狀。然而在另實施例中，突出部份 400 亦可直接由前緣 200 朝面板 300 延伸。此處所言之延伸，係為沿水平方向延伸，然而亦可沿與水平方向夾一角度之方向延伸。

面板 300 係選擇性地連結上蓋 200 之前緣 220，在此一實施例中，面板 300 係可拆地與該上蓋 200 之前緣 220 連結。面板 300 具有第一面 520，且第一面 520 係對應於突出部份 400。以此一實施例而言，當上蓋 200 與面板 300 連結時，第一面 520 係對應並接觸突出部份 400 之側面。當碟片在碟片讀取裝置 100 內破裂時，其伴隨而生之能量迫使上蓋 200 及托盤 600 分別向上下移動或變形，大部分的破碟裂片受到阻擋裝置 240 的阻擋而留在碟片資料讀取裝置 100，僅有小部份較小的破碟裂片或經阻擋裝置 240 衰減能量後的大型破碟裂片由阻擋裝置 240 與托盤之間所形成的間隙 440 向面板 300 方向飛出。由於面板 300 及蓋子 800 均為塑膠材質，其剛性不足以抵擋飛出之破碟裂片所形成之能量，因此飛出的破碟裂片由面板 300 及蓋子 800 的接合處將面板 300 及蓋子 800 分別向上下撐開，並撞擊蓋子 800。當面板

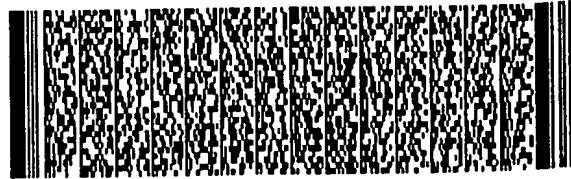


五、發明說明 (5)

300 受破碟裂片之能量作用向上移動時，第一面 520 隨著板 300 的移動而向上抵接突出部份 400 並產生相對作用力。此相對作用力可幫助面板 300 與上蓋 200 之相對位置保持定，避免產生相對位移；另外，第一面 520 的延伸部 522，蓋子 800 具有一預定重疊距離 X，蓋子 800 下端與面板 300 之間具有一間隙 803，當蓋子 800 受破碟裂片之能量作用下移動變形時，由於間隙 803 小於重疊距離 X，因此當蓋子 800 下端抵接面板 300 時，延伸部 522 與蓋子 800 仍相互重疊，以阻擋裂碟破片向外射出。

如圖 2c 所示，面板 300 進一步包含凹槽 500。就此一實施例而言，此一凹槽 500 為狹長槽道，且平行於碟片放置之方向。第一面 520 為凹槽 500 之側壁。當上蓋 200 與面板 300 連結時，突出部份 400 容納於凹槽 500，且凹槽 500 之側壁，亦即第一面 520，係對應突出部份 400 之側面。

圖 3 為本發明第一實施例上蓋 200 之示意圖。如圖 3 所示，阻擋裝置 240 係連接於上蓋 200 之前緣 220，且自前緣 220 向下延伸。此處所言之阻擋裝置 240 可為板狀結構、網狀結構、或其他具有類似功能之結構。就此一實施例而言，阻擋裝置 240 為板狀結構，且與突出部份 400 交錯設置，如圖 3 所示。

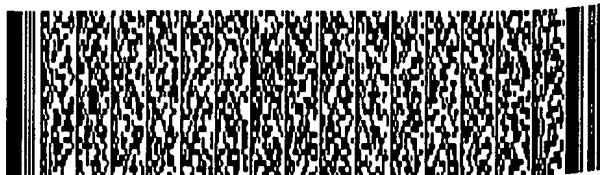
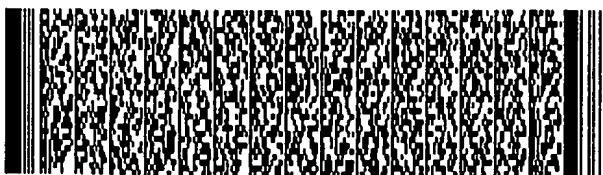


五、發明說明 (6)

本發明進一步包含托盤600及底盤700，托盤600係承托碟片，而底盤700係供支承托盤600。圖4a為本發明盤600底面之示意圖。如圖4a所示，托盤600具有至少一點620。此處所言之支點620泛指可藉由接觸而產生作用加以支撑之結構，係可為球狀、半球狀、條狀、十字狀及其他可提供類似功能者。當碟片在碟片讀取裝置100內破裂時，其伴隨而生之能量迫使托盤600向下移動，此時支點620與底盤700接觸並產生相對作用力，如圖5b所示此相對作用力可限制托盤600與底盤700之相對位置保持固定，避免產生相對位移，以阻擋裂碟破片向外射出。然而在另一實施例中，如圖4b所示，支點620亦可位於底盤700上，而與托盤600接觸並產生相對作用力。亦可為托盤600及底盤700均具有支點620，且托盤600之支點620與底盤700之支點接觸以產生相對作用力。

第二實施例

請參閱圖6。第二實施例與第一實施例之主要不同處在於，面板300具有突出部份400，而上蓋200具有與突出部份400對應之第二面540。突出部份400係連接面板300之內側320。此處所言之突出部份400係可為一板狀突出、球狀突出、半球狀突出、及其他可提供類似功能者。在如圖6所示之實施例中，突出部份400係自內側320朝上蓋200方向延伸。此處所言之延伸，係為沿水平方向延伸，然而亦可為沿與水平方向夾一角度之方向延伸。

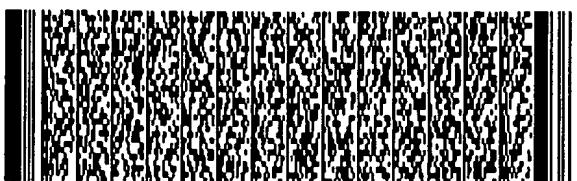


五、發明說明 (7)

上蓋200係選擇性地連結面板300之內側320，在此實施例中，上蓋200係可拆地與該面板300之內側320連結。上蓋200具有第二面540，且第二面540係對應於突出部份400。以此一實施例而言，當上蓋200與面板300連結時，第二面540係對應並接觸突出部份400之側面。當碟片在碟片讀取裝置100內破裂時，其伴隨而生之能量迫使上蓋200向上移動或變形，此時突出部份400與第二面540間產生相對作用力。此相對作用力可幫助面板300與上蓋200之相對位置保持固定，避免產生相對位移，以阻擋裂碟片向外射出。

如圖6所示，上蓋200進一步包含凹槽500。就此一實施例而言，此一凹槽500係為狹長槽道，且平行於碟片放置之方向。第二面540係為凹槽500之側壁。當上蓋200與面板300連結時，突出部份400係容納於凹槽500，且凹槽500之側壁，亦即第二面540，係對應並接觸突出部份400之側面。

藉由以上較佳具體實施例之詳述，係希望能更加清楚描述本發明之特徵與精神，而上述所揭露的較佳具體實施例並非對本發明之範疇的限制。相反地，上述的說明以及各種改變及均等性的安排皆為本發明所欲受到保護的範疇。例如，具有本發明裝置之碟片讀取裝置100亦在本發



五、發明說明 (8)

明所意圖保護之範圍。因此，本發明所申請之專利範圍
範疇應該根據上述的說明作最寬廣的解釋，並涵蓋所有
能均等的改變以及具均等性的安排。

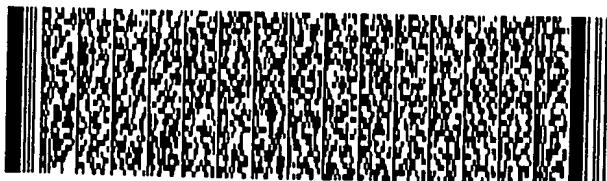


圖式簡單說明

- 圖1 為本發明之示意圖；
圖2a 為本發明第一實施例正視圖；
圖2b 為圖2a 實施例之I-I' 剖面圖；
圖2c 為圖2b 之局部放大圖；
圖3 為本發明第一實施例上蓋之示意圖；
圖4a 為本發明托盤之底部示意圖；
圖4b 為本發明底盤之示意圖；
圖5a 為本發明第一實施例之側視圖；
圖5b 為圖5a 實施例之II-II' 剖面圖；
圖6 為本發明第二實施例之局部放大圖；

圖式元件符號說明

| | | |
|-----|----------|----------|
| 100 | 碟片資料讀取裝置 | |
| 200 | 上蓋 | 220 前緣 |
| 240 | 阻擋裝置 | |
| 300 | 面板 | 320 內側 |
| 400 | 突出部份 | 420 第一長度 |
| 440 | 間隙 | |
| 500 | 凹槽 | 520 第一面 |
| 540 | 第二面 | 522 延伸部 |
| 600 | 托盤 | 620 支點 |
| 700 | 底盤 | 800 蓋子 |
| 801 | 接合處 | 803 間隙 |



六、申請專利範圍

1. 一種裝置，係應用於一碟片資料讀取裝置，該裝置包含：

一上蓋(housing)，該上蓋具有一突出部份(protrusion)，該突出部份係連接該上蓋之一前緣(front edge)；以及

一面板(panel)，該面板係選擇性地連結該上蓋之該前緣，該面板具有一第一面，該第一面係對應於該突出部份；

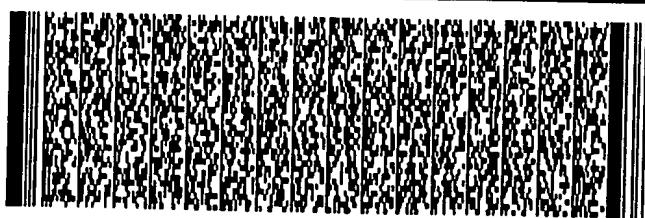
其中，該突出部份及該第一面間之一相對作用力限該面板與該上蓋產生相對位移，以阻擋一裂碟破片向外運動。

2. 如申請專利範圍第1項所述之裝置，其中該面板進一步包含一凹槽(depression)，該第一面係為該凹槽之一側壁，當該上蓋與該面板連結時，該突出部份係容納(received)於該凹槽。

3. 如申請專利範圍第2項所述之裝置，其中該凹槽係為一狹長槽道(slot)。

4. 如申請專利範圍第1項所述之裝置，其中該突出部份係自該前緣延伸而出。

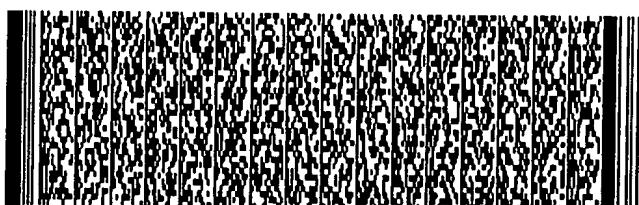
5. 如申請專利範圍第4項所述之裝置，其中該突出部份係



六、申請專利範圍

自該前緣向下延伸至一第一長度，再轉為向該面板方向伸。

6. 如申請專利範圍第1項所述之裝置，其中該上蓋進一步包含一阻擋裝置(stopper)，該阻擋裝置係連接於該前緣，且自該前緣向下延伸，供阻擋該裂碟破片。
7. 如申請專利範圍第1項所述之裝置，其中該裝置進一步包含一托盤(tray)及一底盤(chassis)，該托盤具有至少一支點(support point)，當該碟片破裂時，該支點及該底盤接觸並產生一支撐力限制該托盤與該底盤產生相對位移，以阻擋該裂碟破片向外移動。
8. 如申請專利範圍第1項所述之裝置，其中該裝置進一步包含一托盤(tray)及一底盤(chassis)，該底盤具有至少一支點(support point)，當該碟片破裂時，該支點及該托盤接觸並產生一支撐力限制該托盤與該底盤產生相對位移，以阻擋該裂碟破片向外移動。
9. 一種裝置，係應用於一碟片資料讀取裝置，該裝置包含：
 - 一面板(panel)，該面板具有一突出部份，該突出部份係連接該面板之一內側；以及
 - 一上蓋(housing)，該上蓋係選擇性地連結該面板之

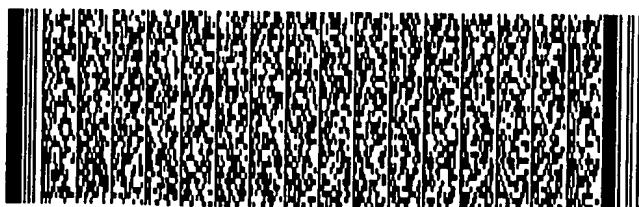


六、申請專利範圍

該內側，該上蓋具有一第二面，該第二面係對應於該突部份；

其中，該突出部份及該第二面間之一相對作用力限該面板與該上蓋產生相對位移，以阻擋該一裂碟破片向移動。

10. 如申請專利範圍第9項所述之裝置，其中該上蓋進一步包含一凹槽(depression)，該第二面係為該凹槽之一側壁，當該上蓋與該面板連結時，該突出部份係容納(received)於該凹槽。
11. 如申請專利範圍第10項所述之裝置，其中該凹槽係為一狹長槽道(slot)。
12. 如申請專利範圍第9項所述之裝置，其中該突出部份水平朝該上蓋方向延伸。
13. 如申請專利範圍第9項所述之裝置，其中該上蓋進一步包含一阻擋裝置(stopper)，該阻擋裝置係連接於該上蓋之一前緣，且自該前緣向下延伸，供阻擋該裂碟破片。
14. 如申請專利範圍第9項所述之裝置，其中該裝置進一步包含一托盤(tray)及一底盤(chassis)，該托盤具有至少一支點(support point)，當該碟片破裂時，該支點及該



六、申請專利範圍

底盤接觸並產生一支撐力限制該托盤移動，以阻擋該裂破片向外移動。

15. 如申請專利範圍第9項所述之裝置，其中該裝置進一步包含一托盤(tray)及一底盤(chassis)，該底盤具有至少一支點(support point)，當該碟片破裂時，該支點及該托盤接觸並產生一支撐力限制該托盤移動，以阻擋該裂破片向外移動。

16. 一種使用一碟片之碟片資料讀取裝置，該碟片資料讀取裝置包含：

一殼體，該殼體具有一開口，該開口之前緣處具有一突出部份；以及

一面板(panel)，該面板係選擇性地連結於(assemble)該殼體之該前緣，該面板具有一對應於該突出部分之第一面；

其中，該突出部份及該第一面間之一相對作用力限制該面板與該前緣產生相對位移，以阻擋一裂碟破片向外移動。

17. 如申請專利範圍第16項所述之碟片資料讀取裝置，其中該面板進一步包含一凹槽(depression)，該第一面係為該凹槽之一側壁，當該前緣與該面板連結時，該突出部份係容納(received)於該凹槽。



六、申請專利範圍

18. 如申請專利範圍第17項所述之碟片資料讀取裝置，其中該凹槽係為一狹長槽道(slot)。
19. 如申請專利範圍第16項所述之碟片資料讀取裝置，其中該突出部份係自該前緣延伸而出。
20. 如申請專利範圍第19項所述之碟片資料讀取裝置，其中該突出部份係自該前緣向下延伸至一第一長度，再轉為向該面板方向延伸。
21. 如申請專利範圍第16項所述之碟片資料讀取裝置，其中該殼體進一步包含一阻擋裝置(stopper)，該阻擋裝置係連接於該前緣，且自該前緣向下延伸，供阻擋該裂碟破片。
22. 如申請專利範圍第16項所述之碟片資料讀取裝置，其中該碟片資料讀取裝置進一步包含一托盤(tray)及一底盤(chassis)，該托盤具有至少一支點(support point)，當該碟片破裂時，該支點及該底盤接觸並產生一支撑力限制該托盤與該底盤產生相對位移，以阻擋該裂碟破片向外移動。
23. 如申請專利範圍第16項所述之碟片資料讀取裝置，其



六、申請專利範圍

中該碟片資料讀取裝置進一步包含一托盤(tray)及一底(chassis)，該底盤具有至少一支點(support point)，該碟片破裂時，該支點及該托盤接觸並產生一支撑力限制該托盤與該底盤產生相對位移，以阻擋該裂碟破片向外移動。

24. 一種使用一碟片之碟片資料讀取裝置，該碟片資料讀取裝置包含：

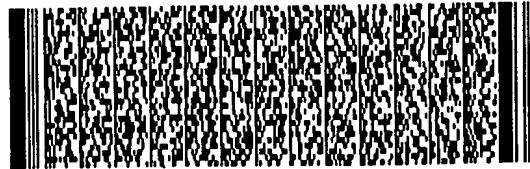
一面板(panel)，該面板具有一內側，該內側設置有一突出部份；以及

一殼體，該殼體具有一開口，該開口之前緣係選擇性地連結該面板之該內側，該前緣對應於該突出部份處設置有一第二面；

其中，該突出部份及該第二面間之一相對作用力限制該面板與該上蓋產生相對位移，以阻擋一裂碟破片向外移動。

25. 如申請專利範圍24項所述之碟片資料讀取裝置，其中該上蓋進一步包含一凹槽(depression)，該第二面係為該凹槽之一側壁，當該上蓋與該面板連結時，該突出部份係容納(received)於該凹槽。

26. 如申請專利範圍第25項所述之碟片資料讀取裝置，其中該凹槽係為一狹長槽道(slot)。



六、申請專利範圍

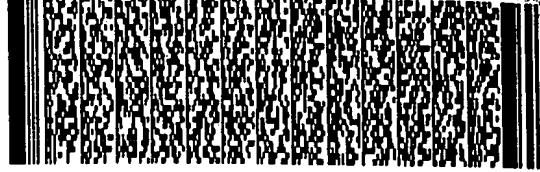
27. 如申請專利範圍第24項所述之碟片資料讀取裝置，其中該突出部份係水平朝該殼體方向延伸。
28. 如申請專利範圍第24項所述之碟片資料讀取裝置，其中該殼體進一步包含一阻擋裝置(stopper)，該阻擋裝置係連接於該前緣，且自該前緣向下延伸，供阻擋該裂碟片。
29. 如申請專利範圍第24項所述之碟片資料讀取裝置，其中該碟片資料讀取裝置進一步包含一托盤(tray)及一底盤(chassis)，該托盤具有至少一支點(support point)，當該碟片破裂時，該支點及該底盤接觸並產生一支撑力限制該托盤移動，以阻擋該裂碟破片向外移動。
30. 如申請專利範圍第24項所述之碟片資料讀取裝置，其中該碟片資料讀取裝置進一步包含一托盤(tray)及一底盤(chassis)，該底盤具有至少一支點(support point)，當該碟片破裂時，該支點及該托盤接觸並產生一支撑力限制該托盤移動，以阻擋該裂碟破片向外移動。



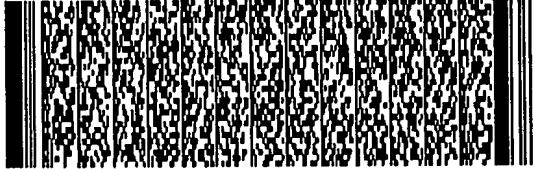
第 1/20 頁



第 2/20 頁



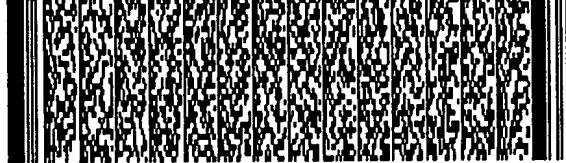
第 2/20 頁



第 3/20 頁



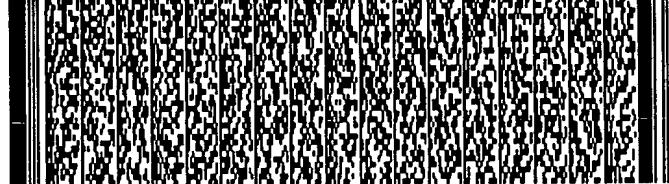
第 5/20 頁



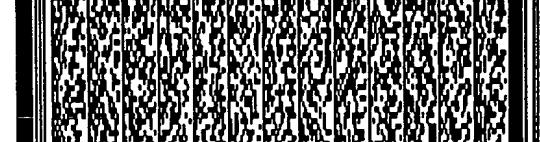
第 5/20 頁



第 6/20 頁



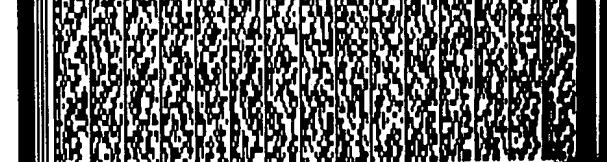
第 7/20 頁



第 7/20 頁



第 8/20 頁



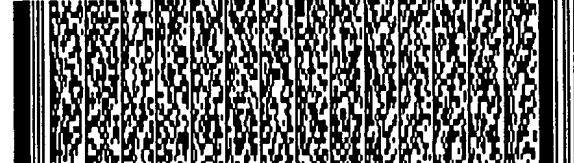
第 8/20 頁



第 9/20 頁



第 9/20 頁



第 10/20 頁



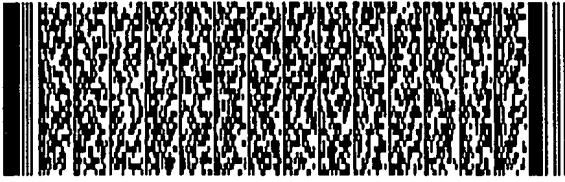
第 10/20 頁



第 11/20 頁



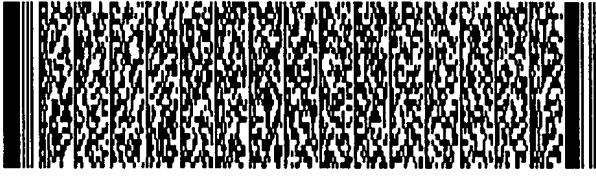
第 11/20 頁



第 12/20 頁



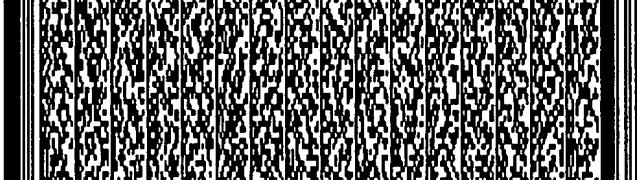
第 13/20 頁



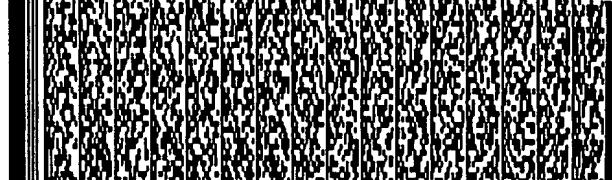
第 14/20 頁



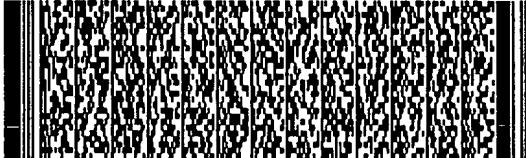
第 15/20 頁



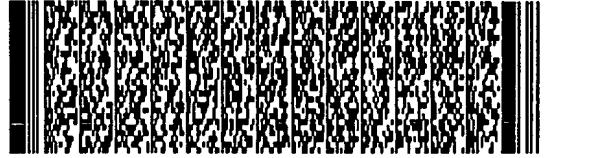
第 16/20 頁



第 17/20 頁



第 17/20 頁



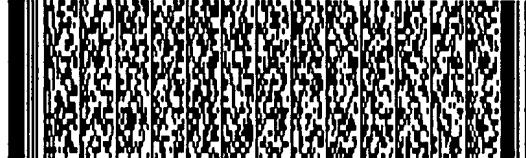
第 18/20 頁



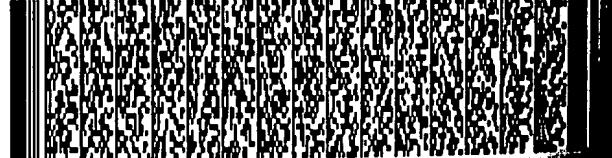
第 19/20 頁



第 19/20 頁



第 20/20 頁



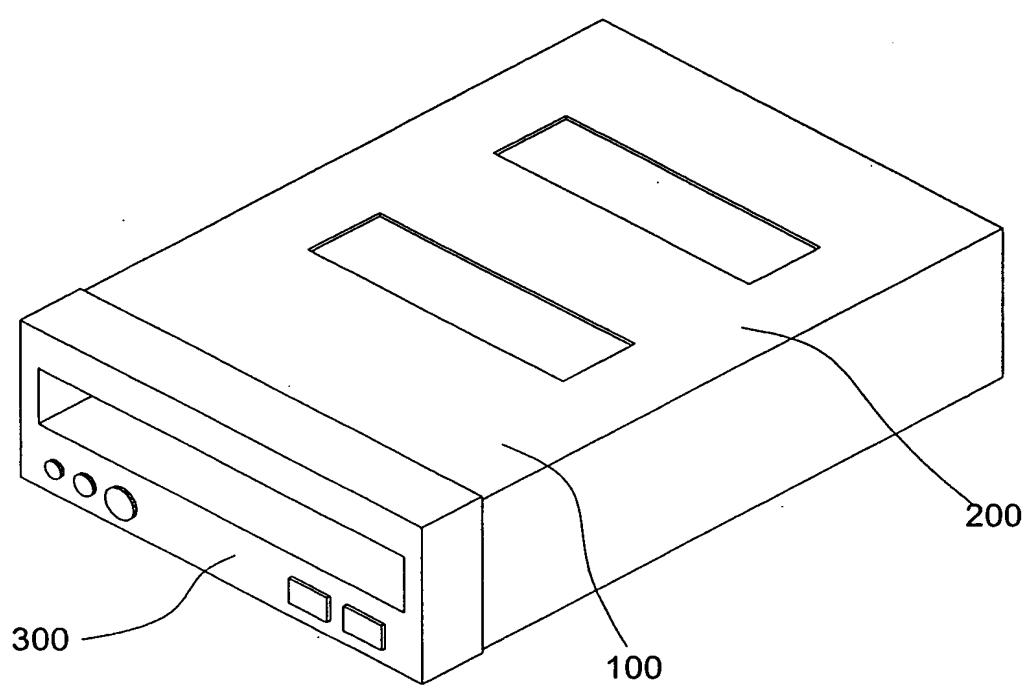


圖 1

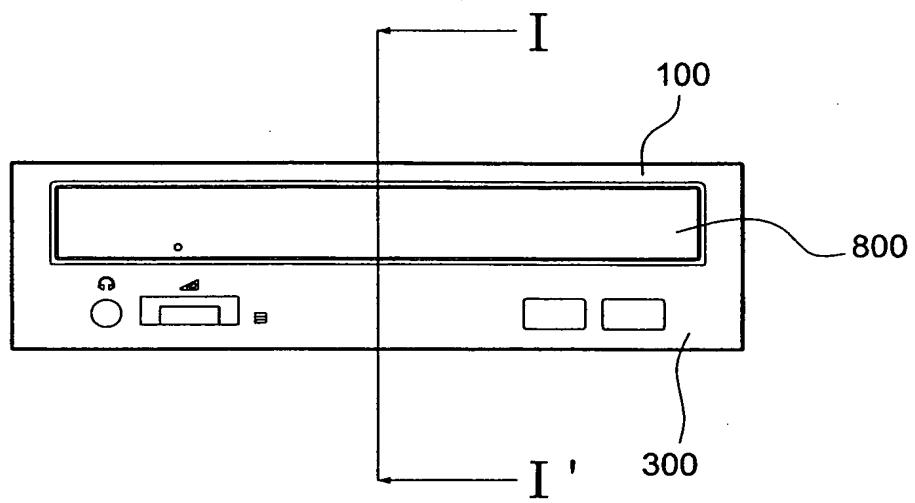


圖 2a

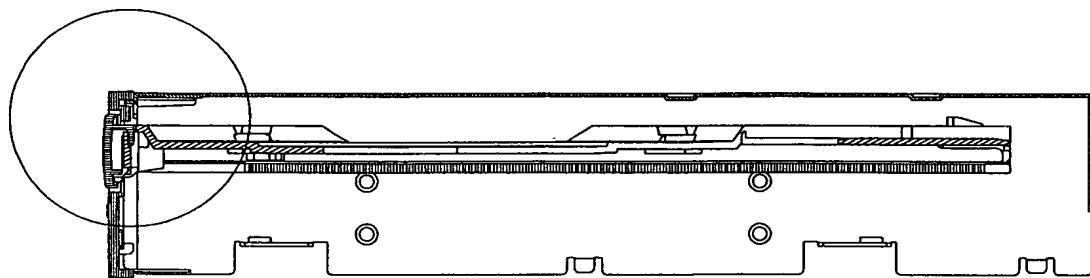


圖 2b

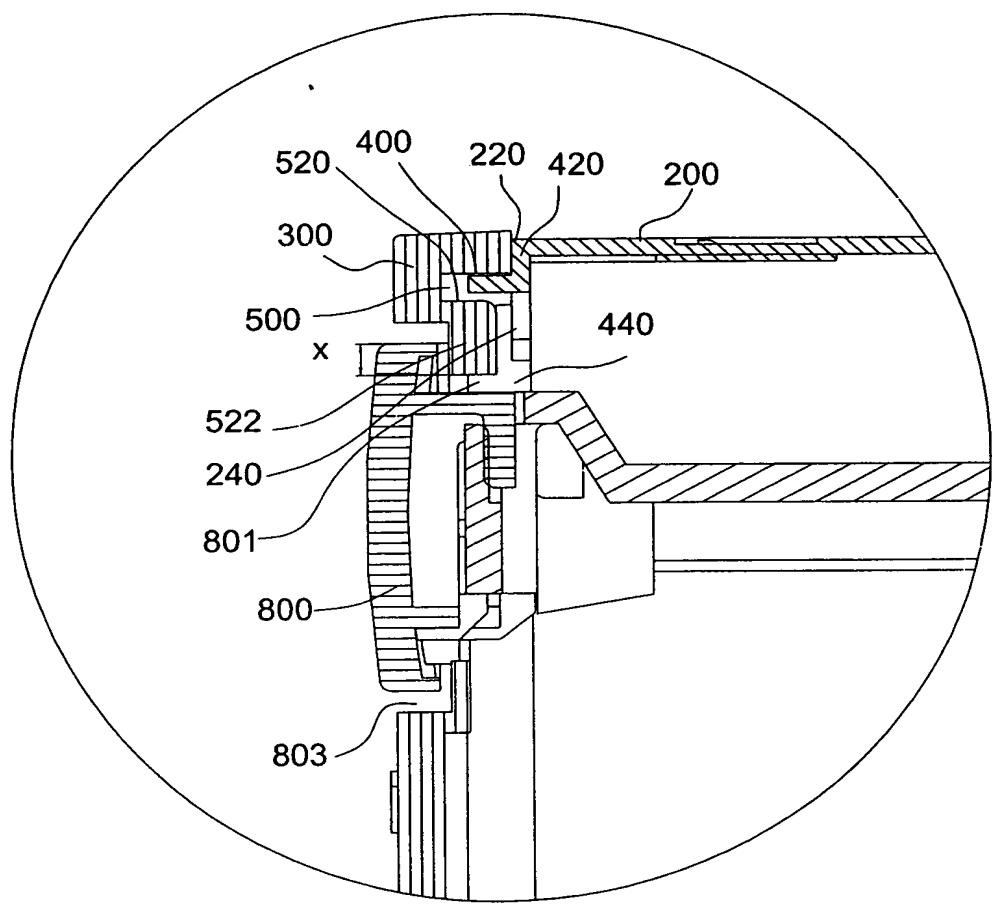


圖 2c

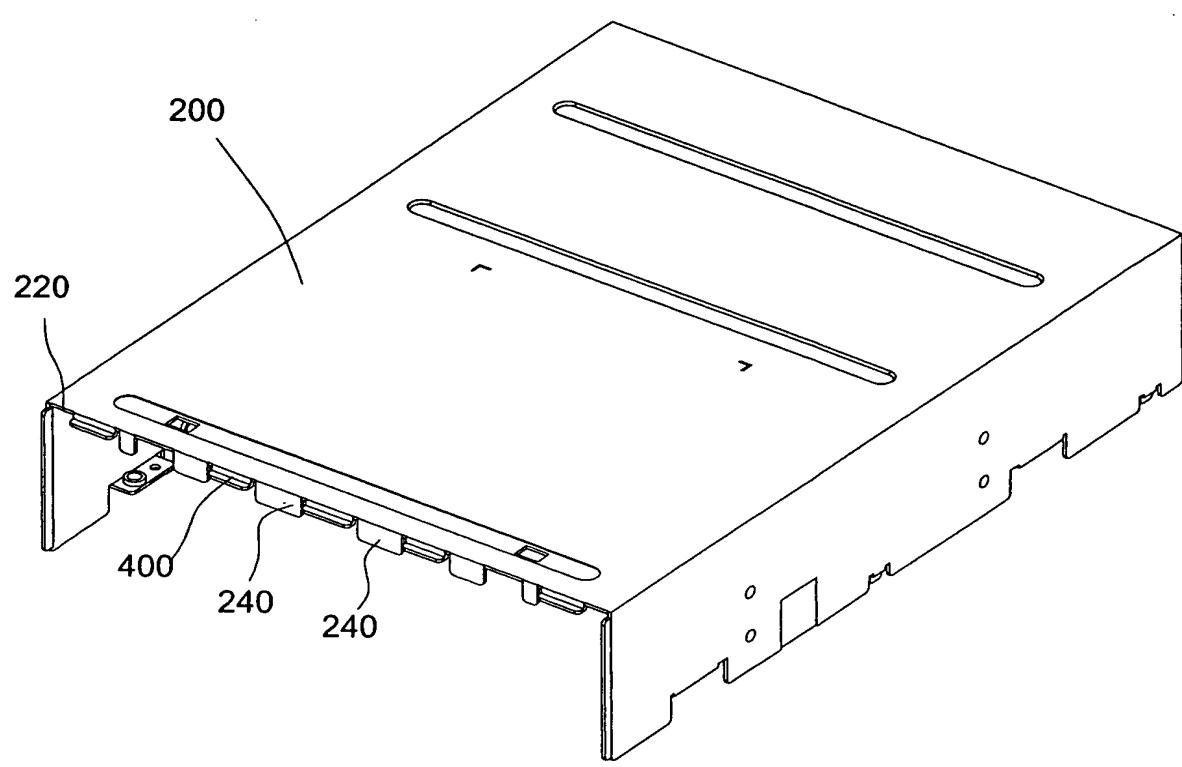


圖 3

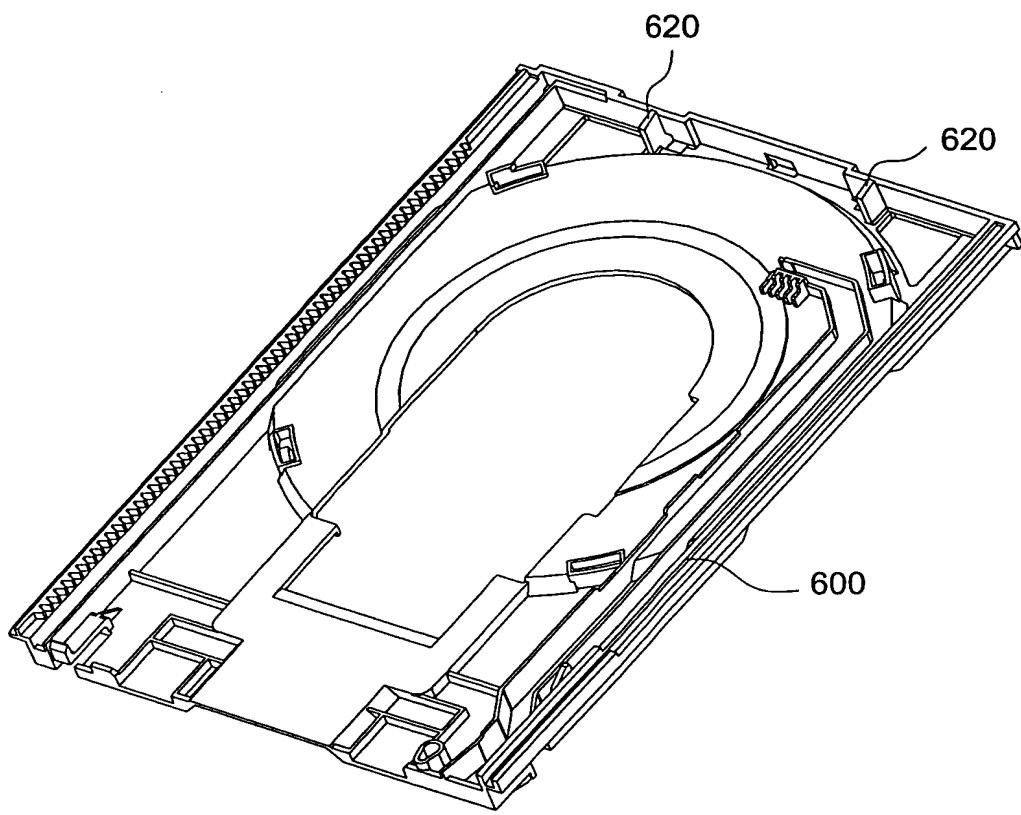


圖 4a

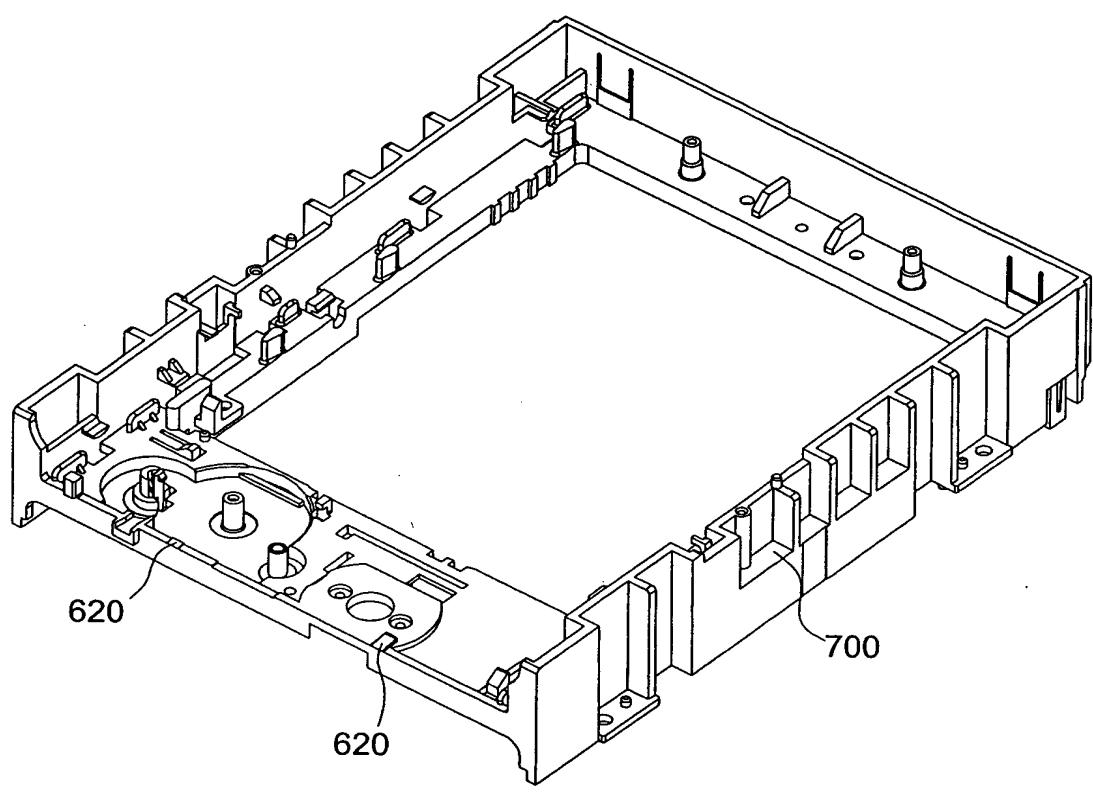


圖 4b

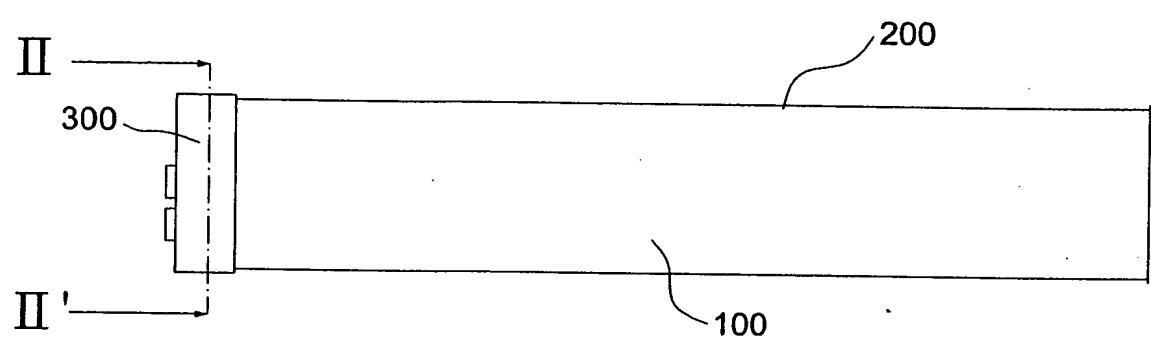


圖 5a

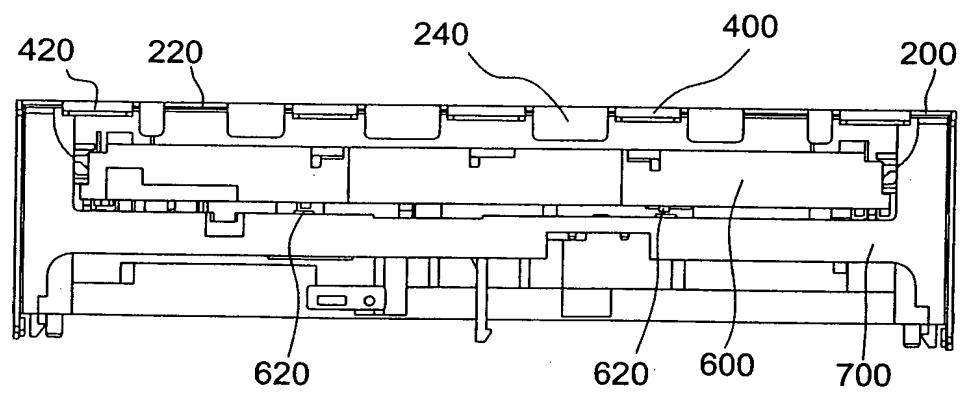


圖 5b

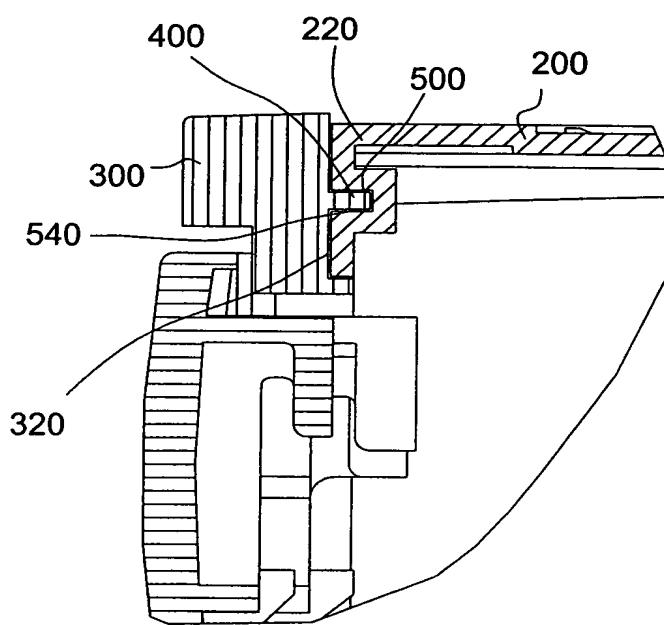


圖 6

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